AD-A098 097 NOAH (J WATSON) INC FALLS CHURCH VA F/G 1/5
A SLOT ALLOCATION MODEL FOR HIGH-DENSITY AIRPORTS.(U)
AUG 80 C F DAY, J M WHITE DOT-FA79WA-4334
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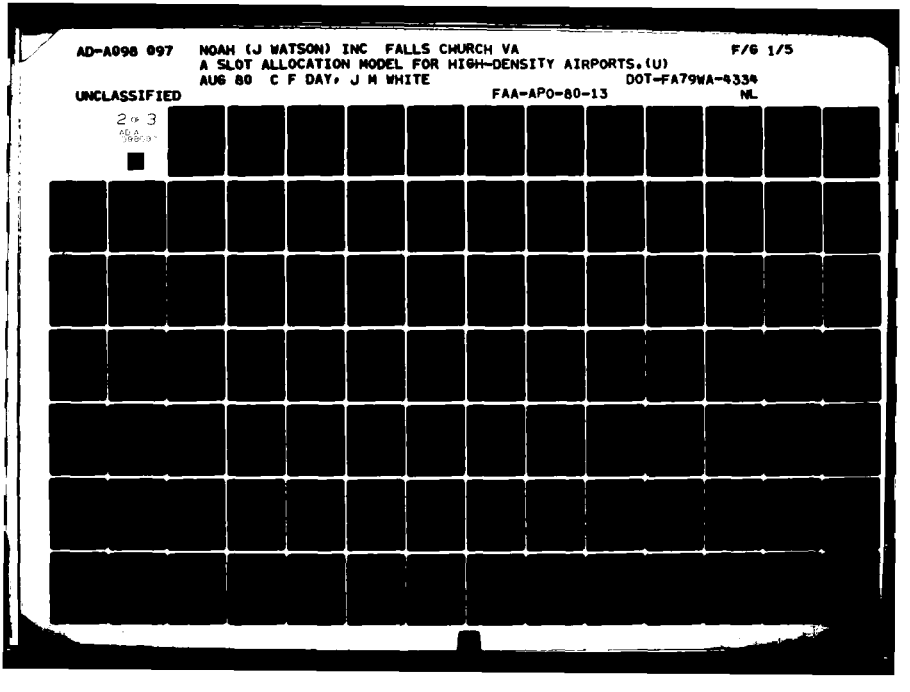

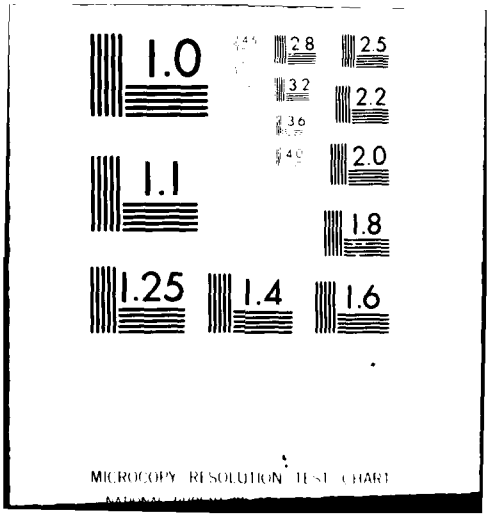
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MICROCOPY RESOLUTION TEST CHART

Table 1

AUGUST 1979 FARES FOR NON-STOP SERVICE FROM DCA

Airport Code	City	Fare
ABE	Allentown	$36.11
ALB	Albany	58.33
ATL	Atlanta	73.15
AVP	Scranton/Wilkes Barre	39.81
BAL	Baltimore	23.15
BDL	Hartford	50.93
BNA	Nashville	74.07
BOS	Boston	60.19
BUF	Buffalo	48.15
CHO	Charlottesville	35.19
[illegible]	Charleston, S.C.	63.89
[illegible]	Cleveland	49.07
[illegible]	Charlotte	54.64
[illegible]	Columbus	54.63
[illegible]	Charleston, W.Va.	55.56
[illegible]	Cincinnati	62.04
[illegible]	Dayton	62.04
[illegible]	Detroit	59.26
[illegible]	New Bern, N.C.	59.26
[illegible]	Newark	40.74
FAY	Fayetteville, N.C.	57.41
GSO	Greensboro	45.37
HPN	White Plains	48.15
HSV	Huntsville	77.78
ILM	Wilmington, N.C.	66.67
IND	Indianapolis	72.22
INT	Winston-Salem	44.44
ISO	Kinston, N.C.	57.41
ISP	Islip MacArthur	47.22
JAX	Jacksonville	84.26

Airport Code	City	Fare
JFK	New York Kennedy	$ 40.74
LEX	Lexington	62.96
LGA	New York La Guardia	40.74
LYH	Lynchburg	44.44
MCO	Orlando	95.37
MEM	Memphis	89.81
MIA	Miami	107.41
MKE	Milwaukee	79.63
MSP	Minneapolis	102.78
MYR	Myrtle Beach	66.67
OAJ	Jacksonville, S.C.	61.11
ORD	Chicago O'Hare	83.33
ORF	Norfolk	33.33
PBI	West Palm Beach	102.78
PHF	Newport News	36.11
PHL	Philadelphia	33.33
PIT	Pittsburgh	38.89
PVD	Providence	59.26
RDU	Raleigh/Durham	43.52
RIC	Richmond	30.56
ROA	Roanoke	47.22
ROC	Rochester	48.15
RWI	Rocky Mount, N.C.	43.52
SDF	Louisville	69.44
SHD	Staunton, Va.	37.04
STL	St. Louis	90.74
SYR	Syracuse	51.85
TPA	Tampa	99.07
TYS	Knoxville	67.59

TABLE 2

THIRD QUARTER 1979 AIRLINE DIRECT OPERATING COST PER MILE BY AIRCRAFT TYPE

	727-200	727-100	737-200	737-100	DC9-50	DC9-30	DC9-10	BAC 111	YS-11
AA	$3.890	$3.670	$--	$--	$--	$--	$--	$--	$--
BN	4.199	4.141	--	--	--	--	--	--	--
DL	4.912	---	--	--	3.867	--	--	--	--
EA	4.859	4.175	--	--	--	--	--	--	--
NA	3.736	3.371	--	--	--	--	--	--	--
NW	4.521	3.708	--	--	--	--	--	--	--
TW	4.508	4.190	--	--	--	--	4.085	--	--
UA	3.942	3.798	--	4.730	--	--	--	--	--
WA	4.036	---	--	--	--	--	--	--	--
	--	4.217	--	--	--	4.233	--	4.332	--
	--	5.078	4.230	--	--	--	--	--	3.966
	--	--	--	--	4.254	2.314	3.410	--	--

TABLE 3

JULY 1979 AIRLINE AVERAGE PROFITS PER OPERATION

A/L	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	AVG
AA	0.	2664.	2608.	4225.	5128.	4110.	4582.	4980.	4635.	4430.	4637.	3742.	5680.	4506.	3331.	3167.	3008.	4071.
BN	0.	2117.	1381.	1818.	0.	874.	2421.	2975.	2715.	3504.	2609.	2348.	3054.	2609.	3779.	1735.	0.	2500.
DL	0.	4229.	2752.	2128.	4310.	4184.	4350.	4634.	4493.	4052.	4605.	5311.	4002.	3738.	3393.	0.	4259.	4102.
EA	0.	2265.	3099.	3927.	4353.	3372.	3429.	3309.	4169.	3691.	3794.	4167.	4030.	2950.	3532.	3075.	2805.	3533.
NA	0.	0.	2241.	3846.	4339.	7738.	6548.	2395.	5068.	4232.	3758.	3234.	4110.	2576.	5090.	2084.	0.	4226.
NW	0.	933.	1172.	1947.	838.	2591.	2567.	1728.	1881.	3000.	3587.	2208.	3287.	2448.	2816.	898.	1192.	2161.
TW	0.	3048.	2595.	2053.	3924.	3074.	2809.	1568.	5209.	4873.	3213.	3382.	2886.	4178.	2622.	2092.	2397.	3097.
UA	0.	203.	3102.	2618.	1913.	3328.	1714.	2259.	4572.	3128.	4639.	3842.	2597.	3421.	2765.	1551.	2321.	2864.
WA	0.	563.	0.	0.	0.	0.	0.	0.	0.	0.	4236.	0.	4042.	0.	0.	0.	0.	2977.
AL	0.	1885.	1482.	1909.	3184.	1515.	2405.	1706.	2306.	2758.	2225.	2197.	2017.	2489.	1484.	1497.	803.	1959.
PI	860.	693.	2620.	1162.	1824.	1481.	1490.	2074.	2789.	1759.	1803.	1410.	2158.	2064.	2043.	1815.	719.	1711.
NC	0.	0.	0.	0.	0.	2611.	2796.	0.	0.	0.	0.	0.	0.	0.	2375.	0.	0.	2540.
AVG	860.	2100.	2513.	2713.	3153.	2992.	2994.	2708.	3720.	3542.	3220.	3299.	3297.	3168.	2947.	2220.	1964.	2943.

TABLE 4

AUGUST 1979 AIRLINE AVERAGE PROFITS PER OPERATION

A/L	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	AVG
AA	0.	2790.	2730.	4366.	5238.	4254.	4708.	5281.	4848.	4703.	5400.	4018.	5924.	4782.	3792.	3518.	3523.	4324.
BN	0.	1728.	1594.	2235.	0.	786.	2486.	3216.	2656.	3818.	2676.	3113.	3573.	3299.	4112.	1557.	0.	2714.
DL	0.	4588.	3181.	2715.	4604.	4580.	4784.	5055.	4853.	4621.	5494.	5778.	4514.	4098.	3865.	0.	4859.	4571.
EA	0.	2246.	3026.	3978.	4263.	3489.	3509.	3500.	4217.	3518.	3990.	4131.	4026.	2942.	3546.	2972.	2901.	3530.
NA	0.	0.	2078.	4214.	4777.	6940.	6883.	4209.	5642.	4331.	5171.	3888.	4837.	3261.	6884.	2474.	0.	4736.
NW	0.	694.	875.	1944.	1160.	2880.	2897.	1394.	2200.	3445.	3582.	2728.	3930.	2885.	3411.	1106.	1180.	2386.
TW	0.	3016.	2589.	1906.	3916.	2865.	3068.	1315.	4619.	4842.	3269.	3664.	3224.	4575.	2945.	1773.	2808.	3191.
UA	0.	56.	3341.	2792.	2050.	4127.	1563.	2223.	5038.	3355.	4997.	4462.	3394.	3792.	3120.	1929.	3623.	3197.
WA	0.	137.	0.	0.	0.	0.	0.	0.	0.	0.	4694.	0.	3473.	0.	0.	2504.	0.	2676.
AL	0.	2124.	1501.	2010.	3167.	1826.	2467.	1793.	2359.	2903.	2303.	2313.	2201.	2462.	1805.	1880.	1076.	2087.
PI	765.	739.	2682.	890.	1821.	1463.	1562.	2130.	2815.	1790.	1842.	1312.	2076.	2208.	2121.	1467.	893.	1702.
NC	0.	0.	0.	0.	0.	452.	794.	0.	0.	0.	0.	0.	0.	0.	451.	0.	0.	537.
AVG	765.	2132.	2510.	2856.	3246.	3128.	3089.	2882.	3840.	3688.	3515.	3554.	3598.	3380.	3203.	2238.	2296.	3106.

TABLE 5

SEPTEMBER 1979 AIRLINE AVERAGE PROFITS PER OPERATION

A/L	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	AVG
AA	0.	2334.	2635.	3962.	4291.	2777.	3924.	7340.	3675.	4346.	5668.	4094.	5558.	4606.	3246.	3339.	3418.	3956.
BN	0.	1600.	919.	2097.	0.	652.	2118.	3275.	2256.	3563.	1980.	3168.	2255.	2237.	3036.	1178.	0.	2370.
DL	0.	3704.	2608.	2401.	3677.	3399.	3550.	4556.	4193.	4837.	5195.	5240.	4097.	3763.	3368.	0.	3511.	3952.
EA	0.	1979.	2808.	3123.	3586.	3122.	3387.	3562.	3500.	3324.	3633.	3394.	3525.	2708.	3286.	2497.	2526.	3134.
NA	0.	0.	1142.	1572.	2880.	4467.	3874.	1521.	2285.	2759.	3397.	2332.	2914.	0.	2595.	0.	0.	2576.
NW	0.	815.	994.	2089.	919.	2459.	2306.	1339.	1778.	2821.	3613.	1855.	3270.	2315.	2723.	701.	1091.	2028.
TW	0.	2554.	2092.	3469.	2864.	2060.	1358.	4595.	4191.	4822.	4378.	4294.	2982.	5066.	2774.	2948.	0.	3296.
UA	0.	-201.	2705.	3361.	1531.	2993.	1383.	1757.	4634.	3136.	4785.	4085.	3301.	3378.	3024.	1816.	3723.	2870.
WA	0.	331.	0.	0.	0.	0.	0.	0.	0.	0.	4983.	0.	3400.	0.	0.	3039.	0.	2991.
AL	0.	989.	1742.	1131.	1990.	1436.	2356.	1452.	1209.	2531.	2204.	2194.	2080.	2635.	1571.	1703.	662.	1763.
PI	681.	604.	1878.	927.	1414.	1021.	1130.	1530.	1951.	1588.	1758.	1573.	1677.	1665.	1606.	854.	990.	1389.
NC	0.	0.	0.	0.	0.	473.	-911.	0.	0.	0.	0.	0.	0.	0.	-365.	0.	0.	-292.
AVG	681.	1712.	2279.	2399.	2472.	2458.	2413.	2622.	3045.	3333.	3343.	3244.	3143.	3107.	2571.	2109.	2060.	2684.

TABLE 6

THIRD QUARTER 1979 AIRLINE AVERAGE PROFITS PER OPERATIONS

A/L	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	AVG
AA	0.	2607.	2659.	4190.	4919.	3856.	4450.	5404.	4342.	4496.	5224.	3932.	5727.	4633.	3472.	3342.	3317.	4128.
BN	0.	1817.	1302.	2050.	0.	798.	2346.	3154.	2548.	3629.	2426.	2868.	2968.	2720.	3648.	1494.	0.	2532.
DL	0.	4182.	2855.	2417.	4213.	4068.	4243.	4751.	4517.	4500.	5096.	5446.	4207.	3870.	3545.	0.	4217.	4214.
EA	0.	2167.	2980.	3684.	4076.	3322.	3445.	3457.	3958.	3513.	3807.	3908.	3866.	2868.	3457.	2852.	2746.	3403.
NA	0.	0.	1849.	3195.	4020.	6462.	5545.	2903.	4467.	3793.	4231.	3221.	3983.	3033.	5035.	2351.	0.	3915.
NW	0.	812.	1013.	1991.	978.	2645.	2593.	1488.	1955.	3093.	3593.	2269.	3497.	2553.	2989.	906.	1155.	2195.
TW	0.	2888.	2438.	2445.	3596.	2702.	2447.	2155.	4675.	4846.	3570.	3755.	3026.	4579.	2781.	2264.	2605.	3188.
UA	0.	16.	3058.	2921.	1836.	3461.	1558.	2076.	4747.	3213.	4807.	4126.	3120.	3519.	2964.	1768.	3185.	2978.
WA	0.	342.	0.	0.	0.	0.	0.	0.	0.	0.	4628.	0.	3647.	0.	0.	2710.	0.	2848.
AL	0.	1686.	1570.	1698.	2680.	1600.	2411.	1668.	2024.	2704.	2245.	2236.	2100.	2526.	1624.	1694.	857.	1942.
PI	774.	682.	2418.	994.	1692.	1327.	1401.	1923.	2530.	1715.	1802.	1427.	1978.	1987.	1932.	1398.	848.	1608.
NC	0.	0.	0.	0.	0.	1186.	913.	0.	0.	0.	0.	0.	0.	0.	833.	0.	0.	941.
AVG	774.	1989.	2439.	2662.	2963.	2869.	2850.	2743.	3549.	3524.	3361.	3371.	3352.	3221.	2921.	2195.	2113.	2918.

Table 7 shows average profit per operation for flights characterized by stage length. Stage lengths of less than 250 miles are defined as short-haul markets, those of 250-500 miles are medium-haul, and stage-lengths greater than 500 miles are long-haul. The New York airports (La Guardia, Kennedy and Newark) are categorized separately from other short-haul markets.

Table 7 includes average profit values for airline flights other than those appearing on the CAB Form 586 DCA data collected. The estimated values for these flights are discussed below.

Estimates for Unavailable Data

Estimates of DCA passenger traffic for typical flights were developed for Air Florida (QH), Ozark (OZ), Midway (ML) and the commuter airlines certificated as air carriers by CAB. These commuter airlines are Altair (AK), Aeromech (KC), New Haven (NB), Empire(UR) and Midsouth (VL). The estimates are based on each airline's scheduled routes and its system-wide load factors and direct operating costs. Each estimate is discussed below.

Air Florida primarily serves the Washington, D.C.-Miami (MIA)/ Jacksonville (JAX), Florida markets. The first arrival and last departure of the day are typically short-haul routes. In August 1979, Air Florida's short-haul routes were to and from Philadelphia (PHL). Air Florida data estimates for the Miami and Philadelphia routes are shown below, as well as the resultant estimates of average profit for each route.

Airline. Air Florida

Routes:	DCA-MIA DCA-JAX	DCA-PHL
Equipment:	737	737
Passengers/operation:	60	60

TABLE 7

AVERAGE PROFIT PER OPERATION BY MARKET GROUP

	Short-Haul	Medium-Haul	Long-Haul	New York	Average
Trunks					
AA	$ --	$3,785	$4,509	$3,346	$4,128
BN	--	2,676	2,826	1,884	2,532
DL	--	4,172	4,242	--	4,214
EA	2,175	3,509	4,801	2,871	3,403
NA	--	1,465	4,485	2,677	3,915
NW	1,213	1,977	3,543	--	2,195
TW	--	2,749	3,437	--	3,188
UA	1,784	2,282	4,664	--	2,978
WA	--	--	2,848	--	2,848
Non-Trunks					
AL	$1,655	$2,057	$1,231	$ --	$1,942
ML	--	--	2,193	--	$2,193
OZ	--	--	2,490	--	2,490
PI	1,514	2,136	--	--	1,656
QH	1,524	--	3,623	--	3,203
RC	--	--	941	--	941
Commuters					
AK	$ 418	$ --	$ --	$ --	$ 418
KC	--	--	--	--	254
NB	--	254	--	--	254
UR	--	314	--	--	314
VL	--	254	--	--	254

Seats/operation:	94	94
Fare:	$107.41	$31.48
Distance:	920 miles	119 miles
DOC per mile:	$3.067	$3.067
Estimated profit per operation:	$3,623	$1,524

Midway Airlines is serving the Washington, D.C. - Chicago (Midway Airport, MDW) market. Data estimates, including the standard Washington-Chicago fare, are shown below.

Airline: Midway Airlines
Routes: DCA -- MDW
Equipment: DC-9-10
Passengers/operation: 54
Seats/operation: 83
Fare: $83.33
Distance: 612 miles
DOC per mile: $3.769

Estimated profit per operation: $2,193

Ozark's markets are Washington, D.C. - St. Louis, Mo. and Washington, D.C. - Champaign, Ill. (CMI) routes. Original estimates are based on only the DCA - CMI routes, as shown below.

Airline: Ozark
Routes: DCA -- CMI
Equipment: DC-9-30
Passengers/operation: 58
Seats/operation: 100

Fare: $83.33
Distance: 612 miles
DOC per mile: $3.829

Estimated profit per operation: $2,490

Altair services the Washington, D.C. - Richmond, Va. (RIC) market. Estimates developed for Altair are shown below.

Airline: Altair
Routes: DCA -- RIC
Equipment: Nord 262
Passengers/operation: 17
Seats/operation: 26
Fare: $37.04
Distance: 94 miles
DOC per mile: $2.252

Estimated profit per operation: $418

In the third quarter of 1979, all Empire routes served the Washington, D.C. - Utica, N.Y. (UCA) markets. Estimates for Empire are shown below.

Airline: Empire
Routes: DCA -- UCA
Equipment: SWM
Passengers/operation: 11
Seats/operation: 17
Fare: $60.19

Distance: 350 miles
DOC per mile: $0.994

Estimated profit per operation: $314.19

The commuter New Haven operates Washington, D.C. - New Haven, Conn. (HVN) routes. Estimates of its flight statistics are shown below.

Airline: New Haven
Routes: DCA -- HVN
Equipment: EMB
Passengers/operation: 10
Seats/operation: 17
Fare: $60.19
Distance: 350 miles
DOC per mile: $0.994

Estimated profit per operation: $254

Although Aeromech has been awarded slots by the Airline Scheduling Committee in the past few allocations, the slots have not yet been used. Estimates for New Haven are used for Aeromech.

No data is available for Midsouth as yet. Midsouth is using its slots for Washington, D.C. - New Bern, N.C. (EWN) routes. Estimates developed for New Haven are used for Midsouth as well.

Minimum Service Requirements

The daily allocations by airline and market group allow constraints guaranteeing minimal service to each market group. The minimum number of DCA operations required to accommodate August 1979 passenger traffic are

calculated for a range of maximum average load factors. Minimal DCA service requirements, shown on Table 8, are tabulated by origin-destination and by the specified maximum average load factor. The calculations are based only on the DCA flights reported in the August 1979 CAB Form 586 data. On Table 8 some markets are designated as being served only by one carrier. The single carrier designations are based only on August 1979 operations, and they do not consider service by commuter carriers.

TABLE 8

MINIMUM DCA OPERATIONS REQUIRED TO SATISFY AUGUST 1979 DAILY DEMAND BY ORIGIN-DESTINATION

ORIG	DEST	DIST	AUGUST 1979 SINGLE * CARRIER	DAILY OPS	TRANS PAX	AVAIL SEATS	LOAD FACTOR	OPERATIONS REQUIRED BY MAXIMUM AVERAGE LOAD FACTOR 0.60	0.70	0.80	0.90	1.00
SHORT-HAUL												
BAL	DCA	30		4.	187.	419.	0.446	3	3	3	2	2
DCA	BAL	30		2.	39.	192.	0.203	1	1	1	1	1
CHO	DCA	91	PI	3.	137.	174.	0.787	4	4	3	3	3
DCA	CHO	91	PI	3.	147.	174.	0.845	5	4	4	3	3
DCA	RIC	94		3.	211.	285.	0.740	4	4	3	3	3
RIC	DCA	94		4.	232.	301.	0.771	6	5	4	4	3
DCA	SHD	109	PI	1.	29.	58.	0.500	1	1	1	1	1
SHD	DCA	109	PI	2.	68.	116.	0.586	2	2	2	2	2
[illegible]	PHL	119	AL	1.	79.	100.	0.790	2	2	1	1	1
[illegible]	DCA	119	AL	1.	81.	97.	0.835	2	2	1	1	1
[illegible]	PHF	122	UA	1.	49.	103.	0.476	1	1	1	1	1
PHF	DCA	122	UA	1.	62.	103.	0.602	1	1	1	1	1
[illegible]	ORF	142		8.	570.	703.	0.811	11	10	9	8	7
ORF	DCA	142		7.	463.	590.	0.785	10	8	7	7	6
ABE	DCA	151	EA	2.	125.	252.	0.496	2	2	2	2	1
[illegible]	ABE	151	EA	2.	163.	274.	0.595	2	2	2	2	2
DCA	LYH	158	PI	2.	104.	116.	0.897	3	3	3	2	2
LYH	DCA	158	PI	3.	113.	174.	0.649	4	3	3	3	2
AVP	DCA	185	EA	2.	186.	274.	0.679	3	2	2	2	2
DCA	AVP	185	EA	2.	165.	274.	0.602	2	2	2	2	2
DCA	ROA	192	PI	4.	198.	274.	0.723	5	5	4	4	3
ROA	DCA	192	PI	4.	229.	384.	0.596	4	4	3	3	3
DCA	EWR	199		7.	508.	825.	0.616	8	7	6	5	5
EWR	DCA	199		8.	669.	906.	0.738	10	9	8	7	6
DCA	PIT	205		10.	557.	1085.	0.513	9	8	7	6	6
PIT	DCA	205		10.	583.	1057.	0.552	10	8	7	7	6
RHI	DCA	212	PI	2.	78.	116.	0.672	3	2	2	2	2
DCA	JFK	213		4.	433.	538.	0.805	6	5	4	4	4
JFK	DCA	213		4.	290.	451.	0.643	5	4	4	3	3

TABLE 8 (continued)

MINIMUM DCA OPERATIONS REQUIRED TO SATISFY AUGUST 1979 DAILY DEMAND BY ORIGIN-DESTINATION

ORIG	DEST	DIST	AUGUST 1979 SINGLE* CARRIER	DAILY OPS	TRANS PAX	AVAIL SEATS	LOAD FACTOR	OPERATIONS REQUIRED BY MAXIMUM AVERAGE LOAD FACTOR 0.60	0.70	0.80	0.90	1.00
DCA	LGA	214		19.	1737.	2105.	0.825	27	23	20	18	16
LGA	DCA	214		19.	1813.	2109.	0.860	28	24	21	19	17
DCA	RDU	227		6.	507.	719.	0.705	7	6	6	5	5
RDU	DCA	227		4.	340.	511.	0.665	5	4	4	3	3
DCA	HPN	234	AL	2.	123.	174.	0.707	3	2	2	2	2
HPN	DCA	234	AL	2.	101.	174.	0.580	2	2	2	2	2
DCA	ISO	245	PI	2.	97.	116.	0.836	3	3	2	2	2
ISO	DCA	245	PI	1.	71.	100.	0.710	2	1	1	1	1
DCA	GSO	248	EA	2.	191.	229.	0.834	3	3	2	2	2
GSO	DCA	248		3.	229.	307.	0.746	4	4	3	3	3
CRW	DCA	249	PI	3.	210.	300.	0.700	4	3	3	3	2
DCA	CRW	249	PI	3.	227.	313.	0.725	4	4	3	3	3
DCA	ISP	249	AL	2.	122.	148.	0.824	3	3	2	2	2
[illegible]	DCA	249	AL	2.	144.	174.	0.828	3	3	2	2	2
[illegible]-HAUL												
[illegible]	INT	256	PI	1.	65.	100.	0.650	1	1	1	1	1
DCA	EWN	261	PI	1.	43.	58.	0.741	2	1	1	1	1
DC[illegible]	OAJ	279	PI	2.	150.	213.	0.704	3	2	2	2	2
[illegible]	DCA	279	PI	2.	125.	158.	0.791	3	3	2	2	2
DCA	FAY	285	PI	2.	144.	200.	0.720	3	2	2	2	2
FAY	DCA	285	PI	2.	171.	213.	0.803	3	3	2	2	2
BUF	DCA	296	AL	5.	380.	422.	0.900	8	7	6	5	5
DCA	BUF	296	AL	4.	274.	296.	0.926	7	6	5	5	4
DCA	ROC	296	AL	3.	230.	248.	0.927	5	4	4	3	3
ROC	DCA	296	AL	2.	161.	174.	0.925	3	3	3	2	2
DCA	SYR	298	AL	2.	183.	200.	0.915	3	3	3	2	2
SYR	DCA	298	AL	3.	196.	226.	0.867	5	4	4	3	3
CLE	DCA	310		9.	649.	1017.	0.638	10	9	8	7	6
DCA	CLE	310		9.	688.	1018.	0.676	11	9	8	7	6
BDL	DCA	313		7.	482.	711.	0.678	8	7	6	6	5

TABLE 8 (continued)

MINIMUM DCA OPERATIONS REQUIRED TO SATISFY AUGUST 1979 DAILY DEMAND BY ORIGIN-DESTINATION

ORIG	DEST	DIST	AUGUST 1979 SINGLE* CARRIER	DAILY OPS	TRANS PAX	AVAIL SEATS	LOAD FACTOR	OPERATIONS REQUIRED BY MAXIMUM AVERAGE LOAD FACTOR 0.60	0.70	0.80	0.90	1.00
DCA	BDL	313		8.	472.	782.	0.604	8	7	6	6	5
ALB	DCA	318	AL	4.	225.	319.	0.705	5	4	4	4	3
DCA	ALB	318	AL	4.	248.	296.	0.838	6	5	5	4	4
DCA	ILM	320	PI	1.	40.	58.	0.690	2	1	1	1	1
CMH	DCA	322		5.	373.	565.	0.660	6	5	5	4	4
DCA	CMH	322		6.	366.	692.	0.529	6	5	4	4	4
CLT	DCA	330	EA	4.	368.	494.	0.745	5	5	4	4	3
DCA	CLT	330	EA	4.	405.	451.	0.898	6	6	5	4	4
DCA	PVD	357	AL	4.	313.	371.	0.844	6	5	5	4	4
PVD	DCA	357	AL	5.	346.	474.	0.730	6	6	5	4	4
[illegible]	DCA	391		4.	316.	462.	0.684	5	4	4	3	3
DCA	DAY	391		4.	305.	465.	0.656	5	4	4	3	3
BOS	DCA	399		21.	2072.	2604.	0.796	28	24	21	19	17
DCA	BOS	399		21.	1995.	2616.	0.763	27	23	20	18	16
DCA	DTW	405		11.	706.	1176.	0.600	11	10	9	8	7
[illegible]	DCA	405		11.	737.	1155.	0.638	12	10	9	8	7
CVG	DCA	411		5.	369.	585.	0.631	6	5	4	4	4
[illegible]	CVG	411		5.	355.	580.	0.612	6	5	4	4	3
DCA	LEX	414	EA	2.	171.	205.	0.834	3	3	2	2	2
LEX	DCA	414	EA	2.	163.	228.	0.715	3	2	2	2	2
DCA	TYS	436	UA	2.	145.	206.	0.704	3	2	2	2	2
TYS	DCA	436	UA	2.	157.	206.	0.762	3	3	2	2	2
CHS	DCA	444	NA	1.	43.	136.	0.316	1	1	1	1	1
DCA	CHS	444	NA	1.	65.	136.	0.478	1	1	1	1	1
DCA	SDF	474		3.	166.	320.	0.519	3	3	2	2	2
SDF	DCA	474		3.	174.	320.	0.544	3	3	2	2	2
DCA	IND	499		4.	319.	486.	0.656	5	4	4	3	3
IND	DCA	499		3.	239.	386.	0.619	3	3	3	2	2

TABLE 8 (continued)

MINIMUM DCA OPERATIONS REQUIRED TO SATISFY AUGUST 1979 DAILY DEMAND BY ORIGIN-DESTINATION

ORIG	DEST	DIST	AUGUST 1979 SINGLE * CARRIER	DAILY OPS	TRANS PAX	AVAIL SEATS	LOAD FACTOR	OPERATIONS REQUIRED BY MAXIMUM AVERAGE LOAD FACTOR 0.60	0.70	0.80	0.90	1.00
LONG-HAUL												
ATL	DCA	547		15.	1533.	1946.	0.788	20	17	15	14	12
DCA	ATL	547		17.	1620.	2152.	0.753	22	19	16	15	13
BNA	DCA	562		6.	472.	750.	0.629	7	6	5	5	4
DCA	BNA	562		6.	470.	748.	0.628	7	6	5	5	4
DCA	ORD	612		23.	2050.	2815.	0.728	28	24	21	19	17
ORD	DCA	612		25.	2101.	3126.	0.672	28	24	21	19	17
DCA	HSV	613	UA	1.	68.	103.	0.660	2	1	1	1	1
HSV	DCA	613	UA	1.	32.	103.	0.311	1	1	1	1	1
[illegible]	JAX	634		3.	248.	320.	0.775	4	4	3	3	3
[illegible]	MKE	634	NW	1.	92.	128.	0.719	2	1	1	1	1
[illegible]	DCA	634		3.	267.	320.	0.834	5	4	4	3	3
[illegible]	DCA	634	NW	1.	90.	128.	0.703	2	1	1	1	1
[illegible]	ATL	719		8.	615.	980.	0.628	9	8	7	6	5
[illegible]	DCA	719		9.	650.	1010.	0.644	10	9	8	7	6
[illegible]	MCO	759		5.	470.	594.	0.791	7	6	5	5	4
[illegible]	DCA	759	NA	3.	281.	408.	0.689	4	3	3	3	2
[illegible]	MEM	762		7.	531.	877.	0.605	7	6	6	5	5
[illegible]	DCA	762		7.	466.	904.	0.515	6	6	5	4	4
DCA	TPA	814		5.	358.	579.	0.618	6	5	4	4	3
[illegible]	DCA	814		4.	283.	437.	0.648	5	4	4	3	3
DCA	PBI	857		2.	158.	199.	0.794	3	3	2	2	2
PBI	DCA	857		2.	168.	243.	0.691	3	2	2	2	2
DCA	MIA	920		7.	674.	895.	0.753	9	8	7	6	6
MIA	DCA	920		8.	767.	967.	0.793	11	9	8	7	7
DCA	MSP	931		8.	503.	1003.	0.501	7	6	5	5	4
MSP	DCA	931		8.	536.	1038.	0.516	7	6	6	5	5

*This designation does not include any service by commuter carriers.

APPENDIX D

WINTER 1979 ALLOCATIONS

Appendix D consists of a series of model solutions based on the Winter 1979 DCA slot requests and the corresponding Airline Scheduling Committee allocations. The airlines originally posted the slot requests shown on Table 1. The Airline Scheduling Committee agreed to two separate allocations, one for the October 28 - December 13, 1979 time period, shown in Table 2, and a second allocation for the December 13, 1979 - April 29, 1980 time period, shown in Table 3. The Committee placed slots in time periods other than those originally requested in order to fill available capacity. For flexibility in modeling this problem, the adjusted table of slot requests shown on Table 4 was constructed. The adjusted requests show for each airline and time period either slots requested or slots actually granted, whichever is larger. The modeled hourly allocations included in this appendix use Table 4 as input.

Table 5 shows daily slot requests by airline and the market each has historically served. For some requests the market is designated as "unknown." For these no assumption concerning the use of the slots, if granted can be drawn from analysis of historical use of slots. In this appendix the model applications which allocate daily slots by market and airline use Table 5 as input.

The cases in Appendix D include allocations by airline and time-of-day and also daily allocations by airline and market for the Winter 1979 allocation problem. In one case the daily slots allowed each airline are specified, and the model allocates these daily totals to individual time periods. In the applications the options differ by the choice of imposed constraints.

Table 6 is an index of the results of Winter 1979 sample applications. For each case and constraint option, one page shows the solution, and a second page shows resulting statistics by airline.

TABLE 1

WINTER 1979 DCA SLOT REQUESTS

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	7	3	3	2	4	3	3	3	5	5	5	3	6	5	4	1	62
BN	1	1	2	2	2	2	3	3	4	3	3	2	2	2	2	0	34
DL	3	2	2	2	2	2	2	2	2	2	4	2	2	3	2	2	36
EA	8	12	8	9	8	7	7	9	10	10	10	10	10	11	9	4	142
NA	0	2	5	4	3	3	2	2	3	4	4	4	4	3	1	0	44
NW	3	2	2	2	1	4	2	2	4	3	2	2	3	3	3	4	42
TW	2	3	4	2	2	3	2	3	5	5	4	4	4	4	5	2	54
UA	3	4	4	7	8	2	7	4	2	2	7	7	5	3	3	2	70
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	28	29	30	30	30	26	28	28	35	35	39	35	36	34	30	15	488
[illegible] TRUNKS																	
	4	8	7	3	3	5	7	6	3	7	7	5	4	5	5	3	82
	2	3	5	7	4	5	4	4	4	6	5	5	4	4	3	3	68
	1	1	1	1	0	0	0	0	1	1	0	0	1	1	1	1	10
	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	7	12	13	11	8	11	11	10	8	14	12	10	9	12	9	7	164
[illegible]																	
	1	0	0	0	1	1	0	0	1	1	0	0	1	0	1	1	8
KC	0	1	2	1	0	0	1	2	1	0	0	1	2	1	0	0	12
[illegible]	0	2	0	0	0	2	0	0	0	1	1	1	1	0	0	0	8
[illegible]	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4
	1	5	2	1	1	3	1	2	2	2	1	2	6	1	1	1	32
TOTAL	36	46	45	42	39	40	40	40	45	51	52	47	51	47	40	23	684

TABLE 7

WINTER 1979 DCA SLOT ALLOCATION

ACTUAL ALLOCATION FOR 10/28/79 to 12/13/79

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	7	4	3	2	3	5	3	2	5	3	4	4	5	4	4	2	60
BN	1	1	2	0	0	2	3	2	3	2	2	1	1	2	2	0	24
DL	3	2	2	2	2	2	2	3	1	4	2	2	2	3	0	2	34
EA	9	12	7	10	8	7	6	10	11	7	7	9	9	8	11	5	136
NA	0	1	4	3	1	1	1	2	3	2	2	2	1	3	2	0	28
NW	3	2	2	2	2	3	3	1	4	3	2	2	3	3	3	2	40
TW	3	1	3	4	3	2	5	3	1	3	4	1	2	3	5	14	57
UA	2	4	4	6	8	2	5	4	2	2	6	7	5	3	2	2	64
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	29	27	27	29	27	24	28	27	30	27	29	29	28	29	30	27	447
NON-TRUNKS																	
AI	7	7	6	2	4	4	6	6	5	5	6	5	3	5	5	6	82
PI	3	2	5	6	5	5	5	4	4	6	4	4	4	4	3	4	68
BH	0	0	1	1	0	0	0	1	1	0	0	1	1	0	1	1	8
[illegible]	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	10	9	12	9	10	10	11	11	10	11	10	10	8	11	9	11	162
COMMUTERS																	
[illegible]	1	0	0	0	1	[illegible]	0	0	0	1	0	0	1	0	0	2	7
KC	0	0	1	1	0	0	0	2	0	0	0	1	1	0	0	0	6
NB	0	2	0	0	0	2	0	0	0	1	1	0	0	0	0	0	6
UR	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4
	1	4	1	1	1	3	0	2	0	2	1	1	4	0	0	2	23
TOTAL	40	40	40	39	38	37	39	40	40	40	40	40	40	40	39	40	632

DAILY AIRLINE STATISTICS

PROFIT = $1.777 MILLION
NOISE EQUIVALENT MOVEMENTS = 201.742
PASSENGER-MILES = 19.329 MILLION
SEATS SUPPLIED = 67895.
PASSENGERS ENPLANED/DEPLANED = 41209.
PASSENGERS TRANSPORTED = 44835.
AVERAGE LOAD FACTOR = 0.660

TABLE 3

WINTER 1979 DCA SLOT ALLOCATION

ACTUAL ALLOCATION FOR 12/13/79 to 4/29/80

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	7	4	3	2	3	5	3	2	5	3	4	4	5	4	4	2	60
BN	1	1	2	0	0	2	3	2	3	2	2	1	1	2	2	0	24
DL	3	2	2	2	2	2	2	3	1	4	2	2	2	3	0	2	34
EA	9	12	7	10	8	8	6	10	11	7	7	8	8	8	12	5	136
NA	0	1	4	4	3	3	1	3	3	1	3	3	1	2	4	0	36
NW	3	2	2	2	2	3	3	1	4	3	2	2	3	3	3	2	40
TW	3	1	3	4	3	2	5	2	2	3	3	3	2	4	3	14	57
UA	2	4	4	6	8	2	6	4	1	3	6	5	6	3	2	2	64
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	29	27	27	30	29	27	29	27	30	27	29	29	28	29	31	27	455
NON-TRUNKS																	
AL	7	7	6	2	4	4	6	6	5	5	6	5	3	5	5	6	82
PI	3	2	5	6	5	5	5	4	4	6	4	4	4	4	3	4	68
[illegible]	0	0	1	1	0	0	0	1	1	0	0	1	1	0	1	1	8
[illegible]	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	10	9	12	9	10	10	11	11	10	11	10	10	8	11	9	11	162
COMMUTERS																	
[illegible]	1	0	0	0	1	1	0	0	0	1	0	0	1	0	0	2	7
KL	0	0	1	1	0	0	0	2	0	0	0	1	1	0	0	0	6
NC	0	2	0	0	0	2	0	0	0	1	1	0	0	0	0	0	6
UR	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4
	1	4	1	1	1	3	0	2	0	2	1	1	4	0	0	2	23
TOTAL	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	640

DAILY AIRLINE STATISTICS

PROFIT = $1.813 MILLION
NOISE EQUIVALENT MOVEMENTS = 205.654
PASSENGER-MILES = 19.737 MILLION
SEATS SUPPLIED = 68964.
PASSENGERS ENPLANED/DEPLANED = 41831.
PASSENGERS TRANSPORTED = 45503.
AVERAGE LOAD FACTOR = 0.660

TABLE 4

WINTER 1979 DCA ADJUSTED SLOT REQUESTS

	MAXIMUM REQUESTS IN INDIVIDUAL TIME PERIODS																	
	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL	DAILY MAX
TRUNKS																		
AA	7	4	3	2	4	5	3	3	5	5	5	4	6	5	4	2	67	62
BN	1	1	2	2	2	2	3	3	4	3	3	2	2	2	2	0	34	34
DL	3	2	2	2	2	2	2	3	2	4	4	2	2	3	2	2	39	36
EA	9	12	8	10	8	8	7	10	11	10	10	10	10	11	12	5	151	142
NA	0	2	5	4	3	3	2	3	3	4	4	4	4	3	4	0	48	44
NW	3	2	2	2	2	4	3	2	4	3	2	2	3	3	3	4	44	42
TW	3	3	4	4	3	3	5	3	5	5	4	4	5	4	5	14	74	58
UA	3	4	4	7	8	2	7	4	2	3	7	7	6	3	3	2	72	70
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4	4
	30	30	30	33	32	29	32	31	36	38	39	36	38	34	36	29	533	492
[illegible]	TRUNKS																	
[illegible]	7	8	7	3	4	5	7	6	5	7	7	5	4	5	5	6	91	82
[illegible]	3	3	5	7	5	5	5	4	4	6	5	5	4	4	3	4	72	68
[illegible]	1	1	1	1	0	0	0	1	1	1	0	1	1	1	1	1	12	10
[illegible]	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4	4
	11	12	13	11	10	11	12	11	10	14	12	11	9	12	9	11	179	164
COMMUTERS																		
AK	1	0	0	0	1	1	0	0	1	1	0	0	1	0	1	2	9	8
KC	0	1	2	1	0	0	1	2	1	0	0	1	2	1	0	0	12	12
NB	0	2	0	0	0	2	0	0	0	1	1	1	1	0	0	0	8	8
US	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	4
	1	5	2	1	1	3	1	2	2	2	1	2	6	1	1	2	33	32
TOTAL	42	47	45	45	43	43	45	44	48	54	52	49	53	47	46	42	745	688

TABLE 5

WINTER 1979 DCA SLOT REQUESTS

CATEGORIZED BY AIRLINE AND MARKET

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	6	62
BN	0	3	15	10	6	34
DL	0	14	20	0	2	36
EA	24	27	35	42	14	142
NA	0	2	19	6	17	44
NK	10	20	10	0	2	42
TW	0	16	28	0	14	58
UA	10	29	21	0	10	70
WA	0	0	4	0	0	4
	44	133	180	64	71	492
NON-TRUNKS						
AL	20	58	2	0	4	82
PI	52	15	0	0	1	68
UH	2	0	8	0	0	10
RC	0	0	4	0	0	4
	74	71	14	0	5	164
COMMUTERS						
AK	8	0	0	0	0	8
KC	0	0	0	0	12	12
NB	0	8	0	0	0	8
UR	0	4	0	0	0	4
	8	12	0	0	12	32
TOTAL	126	216	194	64	88	688

TABLE 6

WINTER 1979 MODEL ALLOCATIONS

Case	Title	Page
	Hourly Allocations Based on Adjusted Requests	
1(A)	Solution with Hourly Capacity Constraints Only	D-9
1(B)	Solution with Hourly Capacity and Noise Constraints	D-11
1(C)	Solution with Hourly Capacity, Noise, and Equity Constraints	D-13
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WINTER 1979 MODEL ALLOCATIONS

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CASE 1(A)

WINTER 1979 DCA SLOT ALLOCATION

SOLUTION WITH HOURLY CAPACITY CONSTRAINTS ONLY

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	7	4	3	2	4	5	3	3	5	5	1	4	6	4	4	2	62
BN	1	1	2	2	0	2	3	3	4	3	3	2	2	2	2	0	32
DL	3	2	0	2	2	2	2	3	2	4	4	2	2	2	2	2	36
EA	9	12	8	10	8	8	7	10	9	10	10	10	3	11	12	5	142
NA	0	0	5	4	3	3	2	3	3	4	2	4	4	3	4	0	44
NW	3	2	2	0	2	4	3	2	4	3	2	2	3	3	3	4	42
TW	3	3	4	4	3	3	1	3	5	3	4	0	5	2	1	14	58
UA	1	4	4	7	8	2	7	4	2	3	7	7	6	3	3	2	70
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	28	28	28	31	30	29	28	31	34	36	33	32	31	30	32	29	490
[illegible]																	
AL	7	8	7	3	4	5	7	4	5	3	7	2	4	5	5	6	82
FI	3	3	4	5	5	5	5	4	0	0	0	5	4	4	3	4	54
GR	1	1	1	1	0	0	0	1	1	1	0	1	1	1	0	0	10
SC	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
	11	12	12	9	10	11	12	9	6	4	7	8	9	10	8	10	148
COMMUTERS																	
	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
TOTAL	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	640

DAILY AIRLINE STATISTICS

PROFIT = $1.941 MILLION
NOISE EQUIVALENT MOVEMENTS = 218.947
PASSENGER-MILES = 21.187 MILLION
SEATS SUPPLIED = 71959.
PASSENGERS ENPLANED/DEPLANED = 43613.
PASSENGERS TRANSPORTED = 47622.
AVERAGE LOAD FACTOR = 0.662

SOLUTION WITH HOURLY CAPACITY CONSTRAINTS ONLY

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	256.	30.380	2761.	7705.	4603.	5294.	0.687
BN	86.	15.776	1131.	4025.	1706.	2235.	0.555
DL	158.	17.280	1758.	4882.	3482.	3560.	0.729
EA	485.	42.742	4617.	16189.	10388.	12108.	0.748
NA	175.	21.516	2173.	5610.	3128.	3347.	0.597
NW	91.	20.706	1194.	5013.	2684.	2684.	0.535
TW	189.	28.246	2503.	7033.	4216.	4216.	0.599
UA	214.	19.880	2186.	7839.	5023.	5313.	0.678
WA	11.	2.000	236.	530.	254.	254.	0.479
	1665.	198.526	18559.	58826.	35484.	39011.	0.663
NON-TRUNKS							
[illegible]	154.	14.801	1567.	7300.	4626.	5061.	0.693
PI	88.	4.347	589.	4581.	2772.	2819.	0.615
[illegible]H	30.	0.920	379.	940.	600.	600.	0.638
RC	2.	0.333	90.	260.	97.	97.	0.373
	275.	20.401	2625.	13081.	8095.	8577.	0.656
[illegible]							
	1.	0.020	3.	52.	34.	34.	0.654
[illegible]	0.	0.0	0.	0.	0.	0.	0.0
[illegible]	0.	0.0	0.	0.	0.	0.	0.0
[illegible]	0.	0.0	0.	0.	0.	0.	0.0
	1.	0.020	3.	52.	34.	34.	0.654
TOTAL	1941.	218.947	21187.	71959.	43613.	47622.	0.662

CASE 1(B)

WINTER 1979 DCA SLOT ALLOCATION

SOLUTION WITH HOURLY CAPACITY AND NOISE CONSTRAINTS

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	2	4	3	2	4	5	3	3	5	5	5	4	6	5	4	2	62
BN	1	0	1	1	0	2	3	3	4	0	1	0	2	2	0	0	20
DL	3	1	0	2	2	2	2	3	2	4	4	2	2	3	2	2	36
EA	7	12	8	10	8	8	7	10	11	10	10	10	3	11	12	5	142
NA	0	0	5	4	3	3	2	3	3	4	2	4	4	3	4	0	44
NW	0	0	0	0	2	4	0	0	1	3	0	2	3	3	0	0	18
TW	3	3	4	4	3	3	0	3	5	2	4	0	5	0	5	14	58
UA	0	4	4	6	8	2	7	4	2	3	7	7	6	3	3	2	66
WA	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
	16	24	25	29	30	29	24	29	33	32	33	29	31	30	31	25	450
NON-TRUNKS																	
[illegible]	7	8	7	3	4	5	7	6	5	3	7	5	4	5	5	1	82
PI	3	3	5	7	5	5	5	4	1	4	0	5	4	4	3	4	62
[illegible]	1	0	1	1	0	0	0	1	1	1	0	1	1	1	0	1	10
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	11	13	11	9	10	12	11	7	8	7	11	9	10	8	6	154
[illegible]MITERS																	
[illegible]	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	2	6
[illegible]	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	4
[illegible]	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
[illegible]	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	1	5	2	0	1	1	1	0	0	0	0	0	0	0	1	2	14
TOTAL	28	40	40	40	40	40	37	40	40	40	40	40	40	40	40	33	618

DAILY AIRLINE STATISTICS

PROFIT = $1.898 MILLION
NOISE EQUIVALENT MOVEMENTS = 200.062
PASSENGER-MILES = 20.297 MILLION
SEATS SUPPLIED = 67749.
PASSENGERS ENPLANED/DEPLANED = 42255.
PASSENGERS TRANSPORTED = 46065.
AVERAGE LOAD FACTOR = 0.680

SOLUTION WITH HOURLY CAPACITY AND NOISE CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	262.	30.380	2756.	7717.	4799.	5433.	0.704
BN	58.	9.860	765.	2559.	1133.	1469.	0.574
DL	158.	17.280	1760.	4881.	3502.	3571.	0.732
EA	488.	42.742	4661.	16189.	10428.	12142.	0.750
NA	175.	21.516	2173.	5610.	3128.	3347.	0.597
NW	53.	8.874	650.	2160.	1322.	1322.	0.612
TW	187.	28.246	2492.	7034.	4184.	4184.	0.595
UA	213.	19.312	2156.	7626.	4938.	5226.	0.685
WA	7.	1.000	133.	265.	143.	143.	0.540
	1601.	179.210	17546.	54041.	33577.	36837.	0.682
NON-TRUNKS							
AL	161.	14.801	1610.	7276.	4702.	5186.	0.713
PI	102.	4.991	675.	5200.	3192.	3258.	0.627
GH	30.	0.920	427.	940.	600.	600.	0.638
[illegible]	0.	0.0	0.	0.	0.	0.	0.0
	292.	20.712	2712.	13416.	8494.	9044.	0.674
[illegible]R							
[illegible]	3.	0.060	10.	156.	102.	102.	0.654
[illegible]	1.	0.040	14.	66.	40.	40.	0.588
[illegible]	1.	0.020	7.	34.	20.	20.	0.588
[illegible]	1.	0.020	8.	34.	22.	22.	0.647
	5.	0.140	38.	292.	184.	184.	0.630
TOTAL	1898.	200.062	20297.	67749.	42255.	46065.	0.680

CASE 1(C)

WINTER 1979 DCA SLOT ALLOCATION

SOLUTION WITH HOURLY CAPACITY, NOISE, AND EQUITY CONSTRAINTS

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	3	3	3	2	4	5	3	3	5	5	5	4	6	5	4	2	62
BN	1	0	2	1	0	2	3	1	4	0	3	1	2	2	0	0	22
DL	3	2	0	2	2	2	2	3	2	4	4	2	2	2	2	2	36
EA	8	12	8	10	8	8	7	10	8	10	10	10	5	11	12	5	142
NA	0	0	5	4	3	3	2	3	3	4	0	4	0	3	4	0	38
NW	0	0	2	0	2	4	3	2	4	3	0	2	3	3	0	4	32
TW	3	3	1	4	2	0	0	3	5	0	4	0	5	0	0	14	44
UA	0	4	4	6	8	2	7	4	2	3	7	7	6	3	3	2	68
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	19	24	25	29	29	26	27	29	33	30	33	31	29	29	26	29	448
NON-TRUNKS																	
AL	7	8	7	3	4	5	7	6	5	3	7	3	4	4	5	4	82
PI	3	3	5	7	5	5	5	4	1	6	0	5	4	4	3	4	64
	1	0	1	1	0	0	0	1	1	1	0	1	1	1	0	1	10
	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	11	11	13	11	10	11	12	11	7	10	7	9	9	11	8	9	160
ITERS																	
	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	2	6
	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	4
	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
UR	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4
	1	5	2	0	1	3	1	0	0	0	0	0	2	0	1	2	18
TOTAL	31	40	40	40	40	40	40	40	40	40	40	40	40	40	35	40	626

DAILY AIRLINE STATISTICS

PROFIT = $1.881 MILLION
NOISE EQUIVALENT MOVEMENTS = 200.065
PASSENGER-MILES = 20.304 MILLION
SEATS SUPPLIED = 68264.
PASSENGERS ENPLANED/DEPLANED = 42311.
PASSENGERS TRANSPORTED = 45981.
AVERAGE LOAD FACTOR = 0.674

CASE 1(C)

SOLUTION WITH HOURLY CAPACITY, NOISE, AND EQUITY CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	262.	30.380	2756.	7717.	4799.	5433.	0.704
BN	64.	10.846	870.	2815.	1253.	1577.	0.560
DL	158.	17.280	1758.	4882.	3482.	3560.	0.729
EA	485.	42.742	4626.	16177.	10400.	12109.	0.749
NA	156.	18.582	2017.	4834.	2734.	2833.	0.586
NW	79.	15.776	954.	3837.	2198.	2198.	0.573
TW	151.	21.428	1983.	5373.	3284.	3284.	0.611
UA	213.	19.312	2156.	7626.	4938.	5226.	0.685
WA	11.	2.000	236.	530.	254.	254.	0.479
	1579.	178.346	17356.	53791.	33342.	36474.	0.678
[illegible] TRUNKS							
AL	157.	14.801	1596.	7297.	4654.	5120.	0.702
[illegible]	105.	5.152	697.	5356.	3300.	3372.	0.630
[illegible]	30.	0.920	427.	940.	600.	600.	0.638
[illegible]	4.	0.666	176.	520.	185.	189.	0.363
	296.	21.539	2895.	14113.	8743.	9281.	0.658
[illegible] [illegible]ITERS							
[illegible]	3.	0.060	10.	156.	102.	102.	0.654
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
[illegible]	1.	0.040	15.	68.	44.	44.	0.647
	6.	0.180	53.	360.	226.	226.	0.628
TOTAL	1881.	200.065	20304.	68264.	42311.	45981.	0.674

CASE 1(D)

WINTER 1979 DCA SLOT ALLOCATION

SOLUTION WITH HOURLY CAPACITY, NOISE, EQUITY AND
PUBLIC SERVICE (COMMUTERS) CONSTRAINTS

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	4	2	3	2	4	5	3	3	5	5	5	4	6	5	4	2	62
BN	1	0	2	2	0	2	3	0	4	0	2	2	2	2	0	0	22
DL	3	2	0	2	2	2	2	3	2	4	4	2	2	2	2	2	36
EA	9	12	8	10	8	8	7	10	9	10	10	10	3	11	12	5	142
NA	0	0	5	4	3	3	2	3	3	4	0	4	0	3	4	0	38
NW	0	1	2	0	2	4	3	1	4	3	0	2	3	3	0	4	32
TW	3	3	2	4	2	0	0	3	5	0	4	0	5	0	1	14	46
UA	0	4	4	4	8	2	7	4	2	3	7	7	6	3	3	2	66
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	21	24	26	28	29	26	27	27	34	30	32	32	27	29	27	29	448
NON-TRUNKS																	
AL	7	8	7	3	4	5	7	6	5	6	7	1	4	4	5	3	82
PI	3	3	5	7	5	5	5	4	0	1	0	5	4	4	3	4	58
QH	1	0	1	1	0	0	0	1	1	1	0	1	1	1	1	0	10
RC	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	11	11	13	11	10	11	12	11	6	8	7	7	9	11	9	7	154
COMMUTERS																	
[illegible]	1	0	0	0	1	1	0	0	0	1	0	0	1	0	1	2	8
[illegible]	0	1	1	1	0	0	1	2	0	0	0	1	1	0	0	0	8
NE	0	2	0	0	0	2	0	0	0	1	1	0	0	0	0	0	6
[illegible]	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4
	1	5	1	1	1	3	1	2	0	2	1	1	4	0	1	2	26
TOTAL	33	40	40	40	40	40	40	40	40	40	40	40	40	40	37	38	628

DAILY AIRLINE STATISTICS

PROFIT = $1.874 MILLION
NOISE EQUIVALENT MOVEMENTS = 200.068
PASSENGER-MILES = 20.293 MILLION
SEATS SUPPLIED = 67977.
PASSENGERS ENPLANED/DEPLANED = 42054.
PASSENGERS TRANSPORTED = 45740.
AVERAGE LOAD FACTOR = 0.673

CASE 1(D)

SOLUTION WITH HOURLY CAPACITY, NOISE, EQUITY AND
PUBLIC SERVICE (COMMUTERS) CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	262.	30.380	2756.	7717.	4799.	5433.	0.704
BN	64.	10.846	878.	2810.	1228.	1568.	0.558
DL	158.	17.280	1758.	4882.	3482.	3560.	0.729
EA	485.	42.742	4617.	16189.	10388.	12108.	0.748
NA	156.	18.582	2017.	4834.	2734.	2833.	0.586
NW	78.	15.776	943.	3832.	2180.	2180.	0.569
TW	156.	22.402	2052.	5608.	3407.	3406.	0.607
UA	209.	18.744	2118.	7418.	4824.	5108.	0.689
WA	11.	2.000	236.	530.	254.	254.	0.479
	1579.	178.752	17374.	53820.	33296.	36450.	0.677
NON-TRUNKS							
	159.	14.801	1606.	7286.	4673.	5151.	0.707
	94.	4.669	633.	4897.	2976.	3030.	0.619
	30.	0.920	427.	940.	600.	600.	0.638
	4.	0.666	176.	520.	189.	189.	0.363
	287.	21.056	2841.	13643.	8438.	8970.	0.657
COMMUTERS							
AR	3.	0.080	13.	208.	136.	136.	0.654
KC	2.	0.080	28.	136.	80.	80.	0.588
NB	2.	0.060	21.	102.	60.	60.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
	8.	0.260	77.	514.	320.	320.	0.623
TOTAL	1874.	200.068	20293.	67977.	42054.	45740.	0.673

CASE 2

WINTER 1979 DCA SLOT ALLOCATION

SOLUTION WITH HOURLY CAPACITY, NOISE, EQUITY AND
PUBLIC SERVICE (COMMUTERS) CONSTRAINTS

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	7	3	3	2	4	3	3	3	5	5	5	3	6	5	4	1	62
BN	1	0	0	2	0	2	3	3	4	0	1	2	0	2	2	0	22
DL	3	2	2	2	2	2	2	2	2	2	4	2	2	3	2	2	36
EA	8	12	8	9	8	7	7	9	10	10	10	10	10	11	9	4	142
NA	0	0	5	4	3	3	2	2	3	4	4	4	0	3	1	0	38
NW	1	0	2	0	1	4	2	2	4	3	0	2	1	3	3	4	32
TW	2	3	4	2	2	3	2	3	5	5	4	3	4	3	5	2	52
UA	1	4	4	7	8	2	7	4	2	2	7	7	5	3	3	2	68
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	24	24	28	28	28	26	28	28	35	32	35	34	28	33	30	15	456
NON TRUNKS																	
AL	4	8	7	3	3	5	7	6	3	2	4	0	4	0	5	3	64
PI	2	3	3	7	4	5	4	4	1	3	0	5	3	4	3	3	54
OH	1	1	1	1	0	0	0	0	1	1	0	0	1	1	1	1	10
RC	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	7	12	11	11	8	11	11	10	5	6	4	5	8	7	9	7	132
COMMUTERS																	
AK	1	0	0	0	1	1	0	0	0	1	0	0	1	0	0	3	8
[illegible]	0	0	1	1	0	0	0	2	0	0	0	1	1	0	0	0	6
NB	0	2	0	0	0	2	0	0	0	1	1	0	0	0	0	0	6
UR	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4
	1	4	1	1	1	3	0	2	0	2	1	1	4	0	0	3	24
TOTAL	32	40	40	40	37	40	39	40	40	40	40	40	40	40	39	25	612

DAILY AIRLINE STATISTICS

PROFIT = $1.822 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.967
PASSENGER-MILES = 19.803 MILLION
SEATS SUPPLIED = 66591.
PASSENGERS ENPLANED/DEPLANED = 41013.
PASSENGERS TRANSPORTED = 44642.
AVERAGE LOAD FACTOR = 0.670

CASE 2

SOLUTION WITH HOURLY CAPACITY, NOISE, EQUITY AND
PUBLIC SERVICE (COMMUTERS) CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	254.	30.380	2701.	7728.	4699.	5346.	0.692
BN	62.	10.846	767.	2759.	1216.	1600.	0.580
DL	151.	17.280	1696.	4833.	3394.	3467.	0.717
EA	484.	42.742	4630.	16121.	10432.	12107.	0.751
NA	157.	18.582	2028.	4763.	2709.	2856.	0.600
NW	74.	15.776	940.	3821.	2103.	2103.	0.550
TW	171.	25.324	2187.	6170.	3805.	3805.	0.617
UA	206.	19.312	2107.	7614.	4842.	5132.	0.674
WA	11.	2.000	236.	530.	254.	254.	0.479
	1571.	182.242	17292.	54339.	33454.	36670.	0.675
NON-TRUNKS							
[illegible]	123.	11.552	1267.	5734.	3634.	3992.	0.696
[illegible]	91.	4.347	600.	4578.	2836.	2891.	0.631
[illegible]	26.	0.920	398.	940.	600.	600.	0.638
RC	4.	0.666	176.	520.	189.	189.	0.363
	244.	17.485	2441.	11772.	7259.	7672.	0.652
COMMUTERS							
AR	3.	0.080	13.	208.	136.	136.	0.654
KC	2.	0.060	21.	102.	60.	60.	0.588
NB	2.	0.060	21.	102.	60.	60.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
	8.	0.240	70.	480.	300.	300.	0.625
TOTAL	1822.	199.967	19803.	66591.	41013.	44642.	0.670

CASE 3(A)

WINTER 1978 DCA SLOT ALLOCATION

SOLUTION WITH A DAILY CAPACITY CONSTRAINT ONLY

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	6	62
BN	0	3	15	10	6	34
DL	0	14	20	0	2	36
EA	24	27	35	42	14	142
NA	0	2	19	6	17	44
NW	0	20	10	0	2	32
TW	0	16	28	0	14	58
UA	10	29	21	0	10	70
WA	0	0	4	0	0	4
	34	133	180	64	71	482
NON-TRUNKS						
AL	20	56	0	0	4	80
PI	52	15	0	0	1	68
GH	2	0	8	0	0	10
RC	0	0	0	0	0	0
	74	71	8	0	5	158
COMMUTERS						
AK	0	0	0	0	0	0
KC	0	0	0	0	0	0
NB	0	0	0	0	0	0
UR	0	0	0	0	0	0
	0	0	0	0	0	0
TOTAL	108	204	188	64	76	640

DAILY AIRLINE STATISTICS

PROFIT = $1.932 MILLION
NOISE EQUIVALENT MOVEMENTS = 215.416
PASSENGER-MILES = 20.941 MILLION
SEATS SUPPLIED = 70983.
PASSENGERS ENPLANED/DEPLANED = 43668.
PASSENGERS TRANSPORTED = 47669.
AVERAGE LOAD FACTOR = 0.672

CASE 3(A)

SOLUTION WITH A DAILY CAPACITY CONSTRAINT ONLY

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	254.	30.380	2658.	7678.	4788.	5372.	0.700
BN	84.	16.762	1100.	4222.	1719.	2299.	0.545
DL	152.	17.280	1676.	4826.	3396.	3468.	0.719
EA	483.	42.742	4642.	16128.	10389.	12089.	0.750
NA	171.	21.516	2154.	5447.	3115.	3300.	0.606
NW	79.	15.776	1189.	3842.	2168.	2168.	0.564
TW	185.	28.246	2375.	6902.	4176.	4176.	0.605
UA	212.	19.880	2239.	7857.	4942.	5255.	0.669
WA	11.	2.000	238.	528.	256.	256.	0.485
	1632.	194.582	18271.	57430.	34949.	38383.	0.668
[illegible] TRUNKS							
[illegible]	156.	14.440	1488.	7020.	4612.	5096.	0.726
	112.	5.474	726.	5593.	3507.	3590.	0.642
	32.	0.920	456.	940.	600.	600.	0.638
	0.	0.0	0.	0.	0.	0.	0.0
	301.	20.834	2670.	13553.	8719.	9286.	0.685
COMMUTERS							
[illegible]	0.	0.0	0.	0.	0.	0.	0.0
KC	0.	0.0	0.	0.	0.	0.	0.0
NB	0.	0.0	0.	0.	0.	0.	0.0
UM	0.	0.0	0.	0.	0.	0.	0.0
	0.	0.0	0.	0.	0.	0.	0.0
TOTAL	1932.	215.416	20941.	70983.	43668.	47669.	0.672

CASE 3(B)

WINTER 1979 DCA SLOT ALLOCATION

SOLUTION WITH DAILY CAPACITY AND NOISE CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	[illegible]	22	29	[illegible]	6	61
BN	0	3	15	0	6	24
DL	0	14	20	0	2	36
EA	24	27	35	42	14	142
NA	0	0	19	6	17	41
NW	[illegible]	[illegible]	10	0	0	1
TW	0	16	28	0	14	58
UA	11	29	21	0	10	70
WA	[illegible]	0	4	0	0	[illegible]
	34	111	180	54	69	448
[illegible]						
	[illegible]	56	2	0	4	62
[illegible]	57	15	[illegible]	0	1	66
[illegible]	2	[illegible]	8	0	0	10
[illegible]	0	0	4	0	0	4
	74	[illegible]	14	0	[illegible]	186
[illegible]						
[illegible]	[illegible]	[illegible]				
	[illegible]		0	0	12	[illegible]
	0	4	0	0	0	[illegible]
[illegible]		4	0	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	0	12	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	54	82	[illegible]

[illegible] AIRLINE [illegible]

PROFIT $1,082 MILLION
NOISE EQUIVALENT MOVEMENTS 195,[illegible]
PASSENGER MILES 20.568 MILLION
SEATS SUPPLIED = 68189.
PASSENGERS ENPLANED/DEPLANED = 47218.
PASSENGERS TRANSPORTED = 46117.
AVERAGE LOAD FACTOR = 0.6[illegible]

CASE 3(B)

SOLUTION WITH DAILY CAPACITY AND NOISE CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	254.	30.380	2658.	7678.	4788.	5372.	0.700
BN	66.	11.832	962.	3012.	1269.	1629.	0.541
DL	152.	17.280	1676.	4826.	3396.	3468.	0.719
EA	483.	42.742	4642.	16128.	10389.	12089.	0.750
NA	168.	20.538	2111.	5197.	3025.	3204.	0.617
NW	35.	4.930	661.	1240.	760.	760.	0.613
TW	185.	28.246	2375.	6902.	4176.	4176.	0.605
UA	212.	19.880	2239.	7857.	4942.	5255.	0.669
WA	11.	2.000	238.	528.	256.	256.	0.485
	1566.	177.828	17562.	53368.	33001.	36209.	0.678
NON-TRUNKS							
AL	159.	14.801	1565.	7220.	4682.	5190.	0.719
PI	112.	5.474	726.	5593.	3507.	3590.	0.642
UH	32.	0.920	456.	940.	600.	600.	0.638
RC	4.	0.666	175.	520.	188.	188.	0.362
	307.	21.861	2921.	14273.	8977.	9568.	0.670
COMMUTERS							
AK	3.	0.080	13.	208.	136.	136.	0.654
KC	3.	0.120	42.	204.	120.	120.	0.588
NE	1.	0.040	14.	68.	40.	40.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
	9.	0.280	84.	548.	340.	340.	0.620
TOTAL	1882.	199.869	20568.	68189.	42318.	46117.	0.676

CASE 3(C)

WINTER 1979 DCA SLOT ALLOCATION

SOLUTION WITH DAILY CAPACITY, NOISE AND EQUITY CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	6	62
BN	0	3	15	0	4	22
DL	0	14	20	0	2	36
EA	24	27	35	42	14	142
NA	0	0	19	0	17	36
NW	0	20	10	0	2	32
TW	0	2	28	0	14	44
UA	10	29	21	0	10	70
WA	0	0	4	0	0	4
	34	117	180	48	69	448
NON-TRUNKS						
AL	20	56	2	0	4	82
PI	52	15	0	0	1	68
BN	2	0	8	0	0	10
RC	0	0	4	0	0	4
	74	71	14	0	5	164
COMMUTERS						
[illegible]	8	0	0	0	0	8
KI	0	0	0	0	6	6
PD	0	8	0	0	0	8
[illegible]	0	4	0	0	0	4
	8	12	0	0	6	26
TOTAL	116	200	194	48	80	638

DAILY AIRLINE STATISTICS

PROFIT = $1.865 MILLION
NOISE EQUIVALENT MOVEMENTS = 200.057
PASSENGER-MILES = 20.517 MILLION
SEATS SUPPLIED = 68127.
PASSENGERS ENPLANED/DEPLANED = 42146.
PASSENGERS TRANSPORTED = 45857.
AVERAGE LOAD FACTOR = 0.673

CASE 3(C)

SOLUTION WITH DAILY CAPACITY, NOISE AND EQUITY CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	254.	30.380	2658.	7678.	4788.	5372.	0.700
BN	61.	10.846	894.	2762.	1167.	1493.	0.541
DL	152.	17.280	1676.	4826.	3396.	3468.	0.719
EA	483.	42.742	4642.	16128.	10389.	12089.	0.750
NA	152.	17.604	2004.	4483.	2575.	2700.	0.602
NW	79.	15.776	1189.	3842.	2168.	2168.	0.564
TW	146.	21.428	1979.	5236.	3168.	3168.	0.605
UA	212.	19.880	2239.	7857.	4942.	5255.	0.669
WA	11.	2.000	238.	528.	256.	256.	0.485
	1550.	177.936	17519.	53340.	32849.	35969.	0.674
NON-TRUNKS							
AL	159.	14.801	1565.	7220.	4682.	5190.	0.719
PI	112.	5.474	726.	5593.	3507.	3590.	0.642
QH	32.	0.920	456.	940.	600.	600.	0.638
RC	4.	0.666	175.	520.	188.	188.	0.362
	307.	21.861	2921.	14273.	8977.	9568.	0.670
COMMUTERS							
AK	3.	0.080	13.	208.	136.	136.	0.654
KC	2.	0.060	21.	102.	60.	60.	0.588
NB	2.	0.080	28.	136.	80.	80.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
	8.	0.260	77.	514.	320.	320.	0.623
TOTAL	1865.	200.057	20517.	68127.	42146.	45857.	0.673

CASE 3(D)

WINTER 1979 DCA SLOT ALLOCATION

SOLUTION WITH DAILY CAPACITY, NOISE, EQUITY
AND PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	6	62
BN	0	3	15	2	2	22
DL	0	14	20	0	2	36
EA	24	27	35	42	14	142
NA	0	0	19	6	17	42
NW	0	20	10	0	2	32
TW	0	0	28	0	14	42
UA	4	29	21	0	10	64
WA	0	0	4	0	0	4
	28	115	180	56	67	446
NON-TRUNKS						
A	20	56	0	0	4	80
PI	52	15	0	0	1	68
[illegible]	2	0	8	0	0	10
RC	0	0	4	0	0	4
	74	71	12	0	5	162
COMMUTERS						
[illegible]	8	0	0	0	0	8
KT	0	0	0	0	12	12
MB	0	8	0	0	0	8
UE	0	4	0	0	0	4
	8	12	0	0	12	32
TOTAL	110	198	192	56	84	640

DAILY AIRLINE STATISTICS

PROFIT = $1.863 MILLION
NOISE EQUIVALENT MOVEMENTS = 200.012
PASSENGER-MILES = 20.404 MILLION
SEATS SUPPLIED = 67849.
PASSENGERS ENPLANED/DEPLANED = 42076.
PASSENGERS TRANSPORTED = 45767.
AVERAGE LOAD FACTOR = 0.675

CASE 3(D)

SOLUTION WITH DAILY CAPACITY, NOISE, EQUITY
AND PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	254.	30.380	2658.	7678.	4788.	5372.	0.700
BN	59.	10.846	854.	2754.	1155.	1491.	0.541
DL	152.	17.280	1676.	4826.	3396.	3468.	0.719
EA	483.	42.742	4642.	16128.	10389.	12089.	0.750
NA	168.	20.538	2111.	5197.	3025.	3204.	0.617
NW	79.	15.776	1189.	3842.	2168.	2168.	0.564
TW	141.	20.454	1922.	4998.	3024.	3024.	0.605
UA	201.	18.176	2171.	7209.	4588.	4841.	0.672
WA	11.	2.000	238.	528.	256.	256.	0.485
	1549.	178.192	17461.	53160.	32789.	35913.	0.676
NON-TRUNKS							
AL	156.	14.440	1488.	7020.	4612.	5096.	0.726
PI	112.	5.474	726.	5593.	3507.	3590.	0.642
OH	32.	0.920	456.	940.	600.	600.	0.638
RC	4.	0.666	175.	520.	188.	188.	0.362
	304.	21.500	2845.	14073.	8907.	9474.	0.673
COMMUTERS							
AK	3.	0.080	13.	208.	136.	136.	0.654
KC	3.	0.120	42.	204.	120.	120.	0.588
NB	2.	0.080	28.	136.	80.	80.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
	10.	0.320	98.	616.	380.	380.	0.617
TOTAL	1863.	200.012	20404.	67849.	42076.	45767.	0.675

CASE 4

WINTER 1979 DCA SLOT ALLOCATION

SOLUTION CONSTRAINED BY HOURLY CAPACITY AND AIRLINE TOTALS OF CASE 3(D)

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	7	4	3	2	4	5	3	3	5	5	2	4	6	3	4	2	62
BN	1	0	2	2	0	2	3	1	4	0	0	2	1	2	2	0	22
DL	3	2	0	2	2	2	2	3	2	4	4	2	2	2	2	2	36
EA	9	12	8	10	8	8	7	10	10	10	10	10	2	11	12	5	142
NA	0	0	5	4	3	3	2	3	3	4	4	4	0	3	4	0	42
NW	3	0	2	0	2	4	3	0	4	3	0	2	3	3	0	3	32
TW	3	2	1	4	2	1	0	3	5	0	0	0	5	0	2	14	42
UA	1	4	4	4	8	1	7	4	0	3	7	7	6	3	3	2	64
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	28	24	25	28	29	26	27	27	33	30	27	32	25	27	30	28	446
NON-TRUNKS																	
AL	7	8	7	3	4	5	7	6	5	1	7	0	4	5	5	6	80
PI	3	3	5	7	5	5	5	4	0	6	5	5	4	4	3	4	68
[illegible]	1	0	1	1	0	0	0	1	1	1	0	1	1	1	1	0	10
RC	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	11	11	13	11	10	11	12	11	6	8	12	6	9	12	9	10	162
[illegible]ERS																	
[illegible]	1	0	0	0	1	1	0	0	0	1	0	0	1	0	1	2	8
[illegible]	0	1	0	1	0	0	1	2	1	0	0	1	2	1	0	0	12
[illegible]	0	2	0	0	0	2	0	0	0	1	1	1	1	0	0	0	8
[illegible]	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4
	1	5	2	1	1	3	1	2	1	2	1	2	6	1	1	2	32
[illegible]	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	640

DAILY AIRLINE STATISTICS

PROFIT = $1.863 MILLION
NOISE EQUIVALENT MOVEMENTS = 200.012
PASSENGER-MILES = 20.153 MILLION
SEATS SUPPLIED = 68356.
PASSENGERS ENPLANED/DEPLANED = 41965.
PASSENGERS TRANSPORTED = 45741.
AVERAGE LOAD FACTOR = 0.669

CASE 4

SOLUTION CONSTRAINED BY HOURLY CAPACITY AND AIRLINE TOTALS OF CASE 3(D)

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	256.	30.380	2755.	7708.	4627.	5320.	0.690
BN	61.	10.846	804.	2757.	1168.	1545.	0.560
DL	158.	17.280	1758.	4882.	3482.	3560.	0.729
EA	486.	42.742	4624.	16195.	10392.	12116.	0.748
NA	169.	20.538	2170.	5296.	2970.	3117.	0.588
NW	77.	15.776	951.	3802.	2138.	2138.	0.562
TW	140.	20.454	1849.	5134.	3096.	3101.	0.604
UA	201.	18.176	2043.	7210.	4662.	4926.	0.683
WA	11.	2.000	236.	530.	254.	254.	0.479
	1559.	178.192	17190.	53516.	32789.	36077.	0.674
NON-TRUNKS							
AL	150.	14.440	1541.	7152.	4506.	4925.	0.689
PI	111.	5.474	721.	5612.	3501.	3570.	0.636
GH	30.	0.920	427.	940.	600.	600.	0.638
RC	4.	0.666	176.	520.	189.	189.	0.363
	294.	21.500	2865.	14224.	8796.	9284.	0.653
COMMUTERS							
AK	3.	0.080	13.	208.	136.	136.	0.654
KC	3.	0.120	42.	204.	120.	120.	0.588
NB	2.	0.080	28.	136.	80.	80.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
	10.	0.320	98.	616.	380.	380.	0.617
TOTAL	1863.	200.012	20153.	68356.	41965.	45741.	0.669

APPENDIX E

SUMMER 1980 ALLOCATIONS

Appendix E consists of a series of model solutions based on the Summer 1980 DCA slot requests and the corresponding Airline Scheduling Committee allocation. The airlines originally posted the slot requests shown on Table 1. The Scheduling Committee allocation, shown on Table 2, placed slots in alternative time periods to fill available capacity. Also, no posted requests are shown for Midway (ML) and Midsouth (VL), but these airlines were granted slots by the Committee. For flexibility in modeling, the adjusted table of slot requests shown on Table 3 was constructed. The adjusted requests show for each airline and time period either slots requested or slots actually granted, whichever is larger. The modeled hourly allocations included in this appendix use Table 3 as input.

Table 4 shows daily slot requests by airline and the market each has historically served. For some requests the market is designated as "unknown." For these no assumption concerning the use of the slots, if granted, can be drawn from analysis of historical use of slots. In this appendix the model applications which allocate daily slots by market and airline use Table 4 as input.

The model solutions differ by choice of imposed constraints, objective function and either the current DCA operating rules or the FAA proposed rules. Unless specified otherwise, the model maximizes industry profits. Some cases maximize passengers carried or maximize passenger-miles generated as variations of the slot allocation model developed. Most of the model applications in this appendix allocate daily slots by airline and market. Some applications spread daily slots specified for each airline by time-of-day.

Table 5 is an index of the results of Summer 1980 sample applications. For each case and constraint option, one page shows the solution, and a second page shows resulting statistics by airline.

TABLE 1

SUMMER 1980 DCA SLOT REQUESTS

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	7	4	5	3	3	5	3	2	5	4	4	3	6	4	5	1	64
BN	1	1	2	0	0	2	3	2	3	2	2	1	1	2	2	0	24
DL	3	2	2	2	2	2	2	2	2	4	2	2	3	2	1	1	34
EA	8	12	8	10	6	6	7	8	9	9	8	10	9	9	12	5	136
NA	0	1	3	4	3	2	1	1	3	2	5	3	3	2	3	0	36
NW	3	3	3	2	3	4	3	1	4	3	2	2	3	6	2	0	44
TW	3	1	3	5	4	2	2	3	5	6	5	4	4	3	2	0	52
UA	1	3	3	3	3	2	2	2	4	3	3	5	5	3	3	1	46
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	27	27	29	29	24	25	23	21	35	34	31	31	34	31	31	8	440
[illegible]-TRUNKS																	
AL	7	9	7	4	4	3	6	8	5	5	7	8	5	6	4	2	90
OZ	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	4
PI	3	3	5	6	4	4	4	4	3	4	5	4	4	4	5	4	66
QH	1	1	2	2	1	1	1	1	2	2	1	1	1	1	1	1	20
RC	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	11	13	14	12	11	10	11	13	10	11	13	14	11	13	10	7	184
COMMUTERS																	
AK	0	0	2	0	1	2	1	0	2	3	3	3	1	1	1	2	22
KC	0	1	2	1	0	0	0	1	2	1	0	1	2	1	0	0	12
NB	0	2	0	0	0	1	1	0	0	1	1	1	1	0	0	0	8
UR	0	2	0	0	0	0	0	1	1	0	0	0	2	0	0	0	6
	0	5	4	1	1	3	2	2	5	5	4	5	6	2	1	2	48
TOTAL	38	45	47	42	36	38	36	36	50	50	48	50	51	46	42	17	672

TABLE 2

SUMMER 1980 DCA SLOT ALLOCATION

ACTUAL ALLOCATION FOR 7/1/80 to 10/25/80

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	6	3	3	4	3	4	3	4	3	3	5	3	5	5	3	5	62
BN	2	2	1	0	0	1	2	2	4	1	2	0	2	2	2	1	24
DL	3	3	1	2	2	2	3	2	1	4	2	2	3	1	1	2	34
EA	9	8	8	11	8	8	8	8	9	7	6	7	9	6	13	5	130
NA	0	2	3	3	2	3	2	1	2	4	2	3	2	2	3	0	34
NW	3	2	3	2	3	4	2	1	4	3	2	2	2	6	2	1	42
TW	3	2	3	4	1	3	3	4	4	4	4	3	2	2	2	2	46
UA	3	2	2	2	3	2	2	2	4	2	3	4	2	3	2	2	40
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	30	24	24	28	22	27	25	24	31	29	26	25	27	27	29	18	416
NON-TRUNKS																	
AL	7	7	6	3	5	3	6	7	5	4	6	6	5	5	5	4	84
ML	0	1	1	1	0	1	0	1	0	0	1	1	0	0	0	1	8
OZ	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	4
PI	3	3	5	6	4	4	5	5	3	4	4	4	4	4	3	5	66
RH	0	2	2	0	2	1	1	0	1	1	0	1	1	1	1	0	14
RC	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	10	13	14	10	14	10	12	13	9	10	12	12	10	12	9	10	180
COMMUTERS																	
AK	0	0	0	1	2	2	1	0	0	1	1	1	1	0	2	2	14
[illegible]	0	0	1	1	0	0	1	1	0	0	0	1	1	0	0	0	6
NB	0	1	1	0	0	1	1	0	0	0	1	1	0	0	0	0	6
SR	0	2	0	0	0	0	0	2	0	0	0	0	1	1	0	0	6
VL	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	0	3	2	2	4	3	3	3	0	1	2	3	3	1	2	2	34
TOTAL	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	30	630

DAILY AIRLINE STATISTICS

PROFIT = $1.757 MILLION
NOISE EQUIVALENT MOVEMENTS = 197.459
PASSENGER-MILES = 19.168 MILLION
SEATS SUPPLIED = 66161.
PASSENGERS ENPLANED/DEPLANED = 40367.
PASSENGERS TRANSPORTED = 43893.
AVERAGE LOAD FACTOR = 0.663

TABLE 3

SUMMER 1980 DCA ADJUSTED SLOT REQUESTS

MAXIMUM REQUESTS IN INDIVIDUAL TIME PERIODS

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL	DAILY MAX
TRUNKS																		
AA	7	4	5	4	3	5	3	4	5	4	5	3	6	4	5	5	72	64
BN	2	2	2	0	0	2	3	2	4	2	2	2	2	2	2	2	31	24
DL	3	3	2	2	2	2	3	2	2	4	2	2	3	2	1	2	37	34
EA	9	12	8	11	8	8	8	8	9	9	8	10	9	9	13	5	144	136
NA	0	2	3	4	3	3	2	1	3	4	5	3	3	2	3	0	41	36
NW	3	3	3	2	3	4	3	1	4	3	2	2	3	6	2	1	45	44
TW	3	2	3	5	4	3	3	4	5	6	5	4	4	3	2	2	58	52
UA	3	3	3	3	3	2	2	2	4	3	3	5	5	3	3	2	49	46
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4	4
	31	31	29	31	26	29	27	24	36	36	32	32	35	31	32	19	481	440
NON-TRUNKS																		
AL	7	9	7	4	5	3	6	8	5	5	7	8	5	6	5	4	94	90
ML	0	1	1	1	0	1	0	1	0	0	1	1	0	0	0	1	8	8
OZ	0	0	0	0	2	1	0	0	0	1	1	1	1	0	0	0	7	4
PI	3	3	5	6	4	4	5	5	4	4	5	5	5	5	5	5	73	66
QH	1	2	2	2	2	1	1	1	2	2	1	1	1	1	1	1	22	20
RC	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4	4
	11	15	15	13	14	11	12	15	11	12	15	16	12	14	11	11	208	192
COMMUTERS																		
AK	0	0	2	1	2	2	1	0	2	3	3	3	1	1	2	2	25	22
KC	0	1	2	1	0	0	1	1	2	1	0	1	2	1	2	2	17	12
NB	0	2	1	0	0	1	1	0	0	1	1	1	1	0	0	0	9	8
UR	0	2	0	0	0	0	0	2	1	0	0	0	2	1	0	0	8	6
VL	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
	0	5	5	2	4	3	3	3	5	5	4	5	6	3	4	4	61	50
TOTAL	42	51	49	46	44	43	42	42	52	53	51	53	53	48	47	34	750	682

TABLE 4

SUMMER 1980 DCA SLOT REQUESTS

CATEGORIZED BY AIRLINE AND MARKET

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	7	0	24
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	2	18	6	9	36
NW	10	20	10	0	4	44
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	36	118	184	61	41	440
NON-TRUNKS						
AL	20	58	2	0	12	90
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
GH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	26	0	22	192
COMMUTERS						
AK	10	0	0	0	12	22
KC	0	0	0	0	12	12
NB	0	8	0	0	0	8
UR	0	4	0	0	2	6
VL	0	2	0	0	0	2
	10	14	0	0	26	50
TOTAL	120	202	210	61	89	682

TABLE 5

SUMMER 1980 MODEL ALLOCATIONS

Case	Title	Page
Current DCA Operating Rules		
1(A)	Profit Maximization with a Daily Capacity Constraint Only	E-9
1(B)	Profit Maximization with Daily Capacity and Noise Constraints	E-11
1(C)	Profit Maximization with Daily Capacity, Noise and Equity Constraints	E-13
1(D)	Profit Maximization with Daily Capacity, Noise, Equity and Public Service (Short-Haul) Constraints	E-15
1(E)	Profit Maximization with Daily Capacity, Noise, Equity and Public Service (All Markets) Constraints	E-17
1(F)	Profit Maximization Constrained by Hourly Capacity and Airline Totals of Case 1(D)	E-19
2(A)	Passenger Maximization with a Daily Capacity Constraint Only	E-21
2(B)	Passenger Maximization with Daily Capacity and Noise Constraints	E-23
2(C)	Passenger Maximization with Daily Capacity, Noise and Equity Constraints	E-25

[illegible]

[illegible]

[illegible]

Case

[illegible]

[illegible]

[illegible]

TABLE 5 (Continued)

SUMMER 1980 MODEL ALLOCATIONS

Case	Title	Page
4(D)	Solution with Daily Capacity, Noise, Equity and Public Service (Short-Haul) Constraints	E-47
4	Solution with Daily Capacity, Noise, Equity and Public Service (All Markets) Constraints	E-49
1	Solution Constrained by Hourly Capacity and Airline Totals of Case 4(D)	E-51
3	Solution Constrained by Hourly Capacity Modification and Airline Totals of Case 4(D)	E-53

CASE 1(A)

SUMMER 1980 DCA SLOT ALLOCATION

PROFIT MAXIMIZATION WITH A DAILY CAPACITY CONSTRAINT ONLY

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	8	8	64
BN	0	3	14	7	0	24
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	2	19	8	9	38
NW	10	20	10	0	4	44
TW	0	18	28	0	8	52
UA	2	14	26	0	4	48
WA	0	0	4	0	0	4
	36	118	184	61	41	440
NON-TRUNKS						
AL	20	50	2	0	18	90
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
GP	2	0	8	0	10	20
RC	0	0	2	0	0	2
	74	70	24	0	22	190
COMMUTERS						
AK	0	0	0	0	0	0
KC	0	0	0	0	0	0
NB	0	0	0	0	0	0
UR	0	0	0	0	0	0
VE	0	0	0	0	0	0
	0	0	0	0	0	0
TOTAL	110	188	208	61	63	630

DAILY AIRLINE STATISTICS

PROFIT = $1.887 MILLION
NOISE EQUIVALENT MOVEMENTS = 208.118
PASSENGER-MILES = 20.737 MILLION
SEATS SUPPLIED = 69285.
PASSENGERS ENPLANED/DEPLANED = 42631.
PASSENGERS TRANSPORTED = 46314.
AVERAGE LOAD FACTOR = 0.668

CASE 1(A)

PROFIT MAXIMIZATION WITH A DAILY CAPACITY CONSTRAINT ONLY

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	61.	11.832	809.	2984.	1225.	1623.	0.544
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	139.	17.604	1756.	4455.	2547.	2700.	0.606
NW	96.	21.692	1358.	5314.	2836.	2836.	0.534
TW	166.	25.324	2129.	6188.	3744.	3744.	0.605
UA	169.	15.525	1849.	5346.	3430.	3628.	0.679
WA	11.	2.000	238.	528.	256.	256.	0.485
	1511.	182.593	16915.	52743.	32137.	35184.	0.667
NON-TRUNKS							
AL	174.	16.245	1721.	7924.	5136.	5694.	0.719
ML	18.	1.196	264.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
PI	109.	5.313	696.	5414.	3398.	3476.	0.642
GH	64.	1.840	911.	1880.	1200.	1200.	0.638
[illegible]	2.	0.333	88.	260.	94.	94.	0.362
	376.	25.525	3822.	16542.	10494.	11130.	0.673
COMMUTERS							
AK	0.	0.0	0.	0.	0.	0.	0.0
KC	0.	0.0	0.	0.	0.	0.	0.0
NB	0.	0.0	0.	0.	0.	0.	0.0
UR	0.	0.0	0.	0.	0.	0.	0.0
VL	0.	0.0	0.	0.	0.	0.	0.0
	0.	0.0	0.	0.	0.	0.	0.0
TOTAL	1887.	208.118	20737.	69285.	42631.	46314.	0.668

CASE 1(B)

SUMMER 1980 DCA SLOT ALLOCATION

PROFIT MAXIMIZATION WITH DAILY CAPACITY AND NOISE CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	26	6	8	64
BN	0	3	14	3	0	20
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	0	19	6	9	34
NW	0	20	10	0	4	34
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	26	116	184	57	41	424
NON-TRUNKS						
AL	20	56	0	0	12	88
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
GH	2	0	8	0	10	20
RC	0	0	2	0	0	2
	74	70	22	0	22	188
COMMUTERS						
AY	6	0	0	0	12	18
KC	0	0	0	0	0	0
NB	0	0	0	0	0	0
UR	0	0	0	0	0	0
VL	0	0	0	0	0	0
	6	0	0	0	12	18
TOTAL	106	186	206	57	75	630

DAILY AIRLINE STATISTICS

PROFIT = $1.869 MILLION
NOISE EQUIVALENT MOVEMENTS = 200.057
PASSENGER-MILES = 20.480 MILLION
SEATS SUPPLIED = 67589.
PASSENGERS ENPLANED/DEPLANED = 42057.
PASSENGERS TRANSPORTED = 45622.
AVERAGE LOAD FACTOR = 0.675

CASE 1(B)

PROFIT MAXIMIZATION WITH DAILY CAPACITY AND NOISE CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	53.	9.860	754.	2500.	1045.	1355.	0.542
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	137.	16.626	1713.	4205.	2457.	2604.	0.619
NW	84.	16.762	1248.	4084.	2296.	2296.	0.562
TW	166.	25.324	2129.	6188.	3744.	3744.	0.605
UA	169.	15.525	1849.	5346.	3430.	3628.	0.679
WA	11.	2.000	238.	528.	256.	256.	0.485
	1488.	174.713	16706.	50779.	31327.	34280.	0.675
NON-TRUNKS							
AL	172.	15.884	1644.	7724.	5068.	5600.	0.725
ML	18.	1.196	264.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
PI	109.	5.313	696.	5414.	3398.	3476.	0.642
QH	64.	1.840	911.	1880.	1200.	1200.	0.638
RC	2.	0.333	88.	260.	94.	94.	0.362
	374.	25.164	3745.	16342.	10424.	11036.	0.675
COMMUTERS							
AK	8.	0.180	29.	468.	306.	306.	0.654
KC	0.	0.0	0.	0.	0.	0.	0.0
NB	0.	0.0	0.	0.	0.	0.	0.0
UR	0.	0.0	0.	0.	0.	0.	0.0
VL	0.	0.0	0.	0.	0.	0.	0.0
	8.	0.180	29.	468.	306.	306.	0.654
TOTAL	1869.	200.057	20480.	67589.	42057.	45622.	0.675

CASE 1(C)

SUMMER 1980 DCA SLOT ALLOCATION

PROFIT MAXIMIZATION WITH DAILY CAPACITY, NOISE AND EQUITY CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	3	0	20
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	0	18	8	8	34
NW	0	20	10	0	4	34
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	26	116	184	57	41	424
NON-TRUNKS						
AL	20	56	0	0	12	88
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	50	14	0	0	0	64
QH	0	0	8	0	10	18
RC	0	0	4	0	0	4
	70	70	24	0	22	186
COMMUTERS						
AK	6	0	0	0	0	6
KC	0	0	0	0	4	4
NB	0	4	0	0	0	4
UP	0	4	0	0	0	4
VL	0	2	0	0	0	2
	6	10	0	0	4	20
TOTAL	102	196	208	57	67	630

DAILY AIRLINE STATISTICS

PROFIT = $1.864 MILLION
NOISE EQUIVALENT MOVEMENTS = 200.065
PASSENGER-MILES = 20.569 MILLION
SEATS SUPPLIED = 67431.
PASSENGERS ENPLANED/DEPLANED = 41871.
PASSENGERS TRANSPORTED = 45434.
AVERAGE LOAD FACTOR = 0.674

CASE 1(C)

DAILY STATISTICS BY AIRLINE

PROFIT MAXIMIZATION WITH DAILY CAPACITY, NOISE AND EQUITY CONSTRAINTS

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	53.	9.860	754.	2500.	1045.	1355.	0.542
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	137.	16.626	1713.	4205.	2457.	2604.	0.619
NW	84.	16.762	1248.	4084.	2296.	2296.	0.562
TW	166.	25.324	2129.	6188.	3744.	3744.	0.605
UA	169.	15.525	1845.	5346.	3430.	3628.	0.679
WA	11.	2.000	238.	528.	256.	256.	0.485
	1488.	174.713	16706.	50779.	31327.	34280.	0.675
NON-TRUNKS							
AL	172.	15.884	1644.	7724.	5068.	5600.	0.725
ML	18.	1.196	264.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
PI	106.	5.152	680.	5258.	3298.	3378.	0.642
GP	61.	1.656	897.	1692.	1080.	1080.	0.638
RC	4.	0.666	175.	520.	188.	188.	0.362
	369.	25.152	3802.	16258.	10298.	10908.	0.671
COMMUTERS							
AK	3.	0.060	10.	156.	102.	102.	0.654
KC	1.	0.040	14.	68.	40.	40.	0.588
NB	1.	0.040	14.	68.	40.	40.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
VL	1.	0.020	7.	34.	20.	20.	0.588
	6.	0.200	60.	394.	246.	246.	0.624
TOTAL	1864.	200.065	20569.	67431.	41871.	45434.	0.674

CASE 1(D)

SUMMER 1980 DCA SLOT ALLOCATION

PROFIT MAXIMIZATION WITH DAILY CAPACITY,
NOISE, EQUITY AND PUBLIC SERVICE (SHORT-HAUL) CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	1	0	18
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	0	19	6	9	34
NW	4	18	10	0	4	36
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	30	114	184	55	41	424
NON-TRUNKS						
AL	20	56	0	0	8	84
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
RH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	24	0	18	186
COMMUTERS						
AK	6	0	0	0	0	6
KC	0	0	0	0	4	4
NB	0	4	0	0	0	4
UR	0	4	0	0	0	4
VL	0	2	0	0	0	2
	6	10	0	0	4	20
TOTA	110	194	208	55	63	630

DAILY AIRLINE STATISTICS

PROFIT = $1.859 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.688
PASSENGER-MILES = 20.491 MILLION
SEATS SUPPLIED = 67437.
PASSENGERS ENPLANED/DEPLANED = 41861.
PASSENGERS TRANSPORTED = 45358.
AVERAGE LOAD FACTOR = 0.673

CASE 1(D)

DAILY STATISTICS BY AIRLINE

PROFIT MAXIMIZATION WITH DAILY CAPACITY,
NOISE, EQUITY AND PUBLIC SERVICE (SHORT-HAUL) CONSTRAINTS

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	49.	8.874	727.	2256.	955.	1221.	0.541
DL	143.	13.320	1582.	4556.	3206.	3274.	0.718
EA	463.	40.938	4446.	15444.	9951.	11579.	0.750
NA	137.	16.626	1713.	4205.	2457.	2604.	0.619
NW	85.	17.748	1245.	4340.	2384.	2384.	0.549
TW	166.	25.324	2129.	6188.	3744.	3744.	0.605
UA	169.	15.525	1849.	5346.	3430.	3628.	0.679
WA	11.	2.000	238.	528.	256.	256.	0.485
	1485.	174.713	16676.	50793.	31325.	34234.	0.674
NON-TRUNKS							
AL	164.	15.162	1566.	7372.	4840.	5348.	0.725
ML	16.	1.196	264.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
PI	105.	5.313	698.	5414.	3398.	3476.	0.642
QH	64.	1.840	911.	1880.	1200.	1200.	0.638
RC	4.	0.666	175.	520.	186.	186.	0.362
	368.	24.775	3755.	16250.	10290.	10676.	0.669
COMMUTERS							
AK	3.	0.060	10.	156.	102.	102.	0.654
KC	1.	0.040	14.	68.	40.	40.	0.588
NB	1.	0.040	14.	68.	40.	40.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
VL	1.	0.020	7.	34.	20.	20.	0.588
	6.	0.200	60.	394.	246.	246.	0.624
TOTAL	1859.	199.688	20491.	67437.	41861.	45358.	0.673

CASE 1(E)

SUMMER 1980 DCA SLOT ALLOCATION

PROFIT MAXIMIZATION WITH DAILY CAPACITY, NOISE,
EQUITY AND PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	3	0	20
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	1	19	5	9	34
NW	4	20	10	0	0	34
TW	0	18	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	30	117	184	56	37	424
NON-TRUNKS						
AL	20	56	0	0	8	84
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
RH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	24	0	18	186
COMMUTERS						
AK	6	0	0	0	0	6
KC	0	0	0	0	4	4
NB	0	4	0	0	0	4
UR	0	4	0	0	0	4
VL	0	2	0	0	0	2
	6	10	0	0	4	20
TOTAL	110	197	208	56	59	630

DAILY AIRLINE STATISTICS

PROFIT = $1.857 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.688
PASSENGER-MILES = 20.452 MILLION
SEATS SUPPLIED = 67437.
PASSENGERS ENPLANED/DEPLANED = 41793.
PASSENGERS TRANSPORTED = 45328.
AVERAGE LOAD FACTOR = 0.672

CASE 1(E)

PROFIT MAXIMIZATION WITH DAILY CAPACITY, NOISE,
EQUITY AND PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	53.	9.860	754.	2500.	1045.	1355.	0.542
DL	143.	16.320	1582.	4556.	3206.	3274.	0.718
EA	463.	40.936	4446.	15444.	9951.	11579.	0.750
NA	135.	18.626	1717.	4211.	2427.	2568.	0.610
NW	80.	16.762	1175.	4092.	2256.	2256.	0.551
TW	166.	25.324	2129.	6188.	3744.	3744.	0.605
UA	169.	15.525	1849.	5346.	3430.	3628.	0.679
WA	11.	2.000	238.	528.	256.	256.	0.485
	1483.	174.713	16637.	50793.	31257.	34204.	0.673
NON-TRUNKS							
AL	164.	15.162	1566.	7372.	4840.	5348.	0.725
ML	16.	1.196	264.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
PI	105.	5.313	696.	5414.	3398.	3478.	0.642
UH	64.	1.840	911.	1880.	1200.	1200.	0.638
RC	4.	0.666	175.	520.	186.	188.	0.362
	368.	24.775	3755.	16250.	10290.	10878.	0.669
COMMUTERS							
AK	3.	0.060	10.	156.	102.	102.	0.654
KC	1.	0.040	14.	68.	40.	40.	0.588
NB	1.	0.040	14.	68.	40.	40.	0.588
UP	1.	0.040	15.	68.	44.	44.	0.647
VL	1.	0.020	7.	34.	20.	20.	0.588
	6.	0.200	60.	394.	246.	246.	0.624
TOTAL	1857.	199.688	20452.	67437.	41793.	45328.	0.672

CASE 1(F)

SUMMER 1980 DCA SLOT ALLOCATION

PROFIT MAXIMIZATION CONSTRAINED BY HOURLY CAPACITY
AND AIRLINE TOTALS OF CASE 1(D)

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	7	0	5	4	3	5	3	4	5	4	5	3	6	0	5	5	64
BN	2	0	0	0	0	1	3	2	4	0	2	0	2	2	0	0	18
DL	3	3	0	2	2	2	3	2	2	4	2	2	3	1	1	2	34
EA	9	12	8	11	8	8	8	8	8	9	8	10	2	9	13	5	136
NA	0	0	3	4	3	3	2	1	3	4	2	3	3	2	1	0	34
NW	3	0	3	0	3	4	3	1	4	3	1	2	3	6	0	0	36
TW	3	2	2	5	4	3	2	4	5	6	5	0	4	3	2	2	52
UA	1	3	3	2	3	2	2	2	4	3	3	5	5	3	3	2	46
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	29	20	24	28	26	28	26	24	35	34	28	26	28	26	28	16	424
NON-TRUNKS																	
AL	7	9	7	4	3	3	6	6	5	0	7	7	5	5	5	3	84
ML	0	1	1	1	0	1	0	1	0	0	1	1	0	0	0	1	8
OZ	0	0	0	0	2	1	0	0	0	0	0	0	1	0	0	0	4
PI	3	3	5	5	4	4	5	5	0	4	3	5	5	5	5	5	66
SR	1	2	2	2	2	1	1	1	0	2	1	1	1	1	1	1	20
RC	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	11	15	15	12	12	11	12	15	5	6	12	14	12	13	11	10	186
COMMUTERS																	
AT	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	2	6
KC	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4
NB	0	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4
UP	0	2	0	0	0	0	0	1	0	0	0	0	0	1	0	0	4
VI	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	0	5	1	0	2	1	2	1	0	0	0	0	0	1	3	4	20
TOTAL	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	30	630

DAILY AIRLINE STATISTICS

PROFIT = $1.862 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.688
PASSENGER-MILES = 20.226 MILLION
SEATS SUPPLIED = 67702.
PASSENGERS ENPLANED/DEPLANED = 41973.
PASSENGERS TRANSPORTED = 45586.
AVERAGE LOAD FACTOR = 0.673

CASE 1(F)
PROFIT MAXIMIZATION CONSTRAINED BY HOURLY CAPACITY
AND AIRLINE TOTALS OF CASE 1(D)

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	268.	31.360	2826.	7899.	4881.	5596.	0.708
BN	54.	8.874	699.	2276.	1023.	1329.	0.584
DL	146.	16.320	1639.	4606.	3244.	3316.	0.720
EA	463.	40.936	4387.	15501.	9914.	11570.	0.746
NA	140.	16.626	1744.	4326.	2464.	2645.	0.611
NW	91.	17.748	1136.	4310.	2474.	2474.	0.574
TW	176.	25.324	2242.	6239.	3907.	3908.	0.626
UA	142.	15.525	1498.	5155.	3341.	3469.	0.673
WA	11.	2.000	236.	530.	254.	254.	0.479
	1494.	174.713	16411.	50842.	31502.	34561.	0.680
NON-TRUNKS							
[illegible]	162.	15.162	1654.	7466.	4777.	5266.	0.705
ML	18.	1.196	264.	664.	432.	432.	0.651
[illegible]	10.	0.598	142.	400.	232.	232.	0.580
[illegible]	108.	5.313	713.	5536.	3395.	3460.	0.625
PH	60.	1.840	805.	1880.	1200.	1200.	0.638
[illegible]	4.	0.666	176.	520.	189.	189.	0.363
	362.	24.775	3755.	16466.	10225.	10779.	0.655
COMMUTERS							
AR	3.	0.060	10.	156.	102.	102.	0.654
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
NE	1.	0.040	14.	68.	40.	40.	0.588
UA	1.	0.040	15.	68.	44.	44.	0.647
VE	1.	0.020	7.	34.	20.	20.	0.588
	6.	0.200	60.	394.	246.	246.	0.624
TOTAL	1862.	199.688	20226.	67702.	41973.	45586.	0.673

CASE 2(A)

SUMMER 1980 DCA SLOT ALLOCATION

PASSENGER MAXIMIZATION WITH A DAILY CAPACITY CONSTRAINT

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	7	0	24
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	2	19	6	9	36
NW	10	20	10	0	4	44
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	36	118	184	61	41	440
NON-TRUNKS						
AL	20	56	0	0	12	88
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
QH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	24	0	22	190
COMMUTERS						
AK	0	0	0	0	0	0
KC	0	0	0	0	0	0
NB	0	0	0	0	0	0
UR	0	0	0	0	0	0
VL	0	0	0	0	0	0
	0	0	0	0	0	0
TOTAL	110	188	208	61	63	630

DAILY AIRLINE STATISTICS

PROFIT = $1.886 MILLION
NOISE EQUIVALENT MOVEMENTS = 208.090
PASSENGER-MILES = 20.748 MILLION
SEATS SUPPLIED = 69345.
PASSENGERS ENPLANED/DEPLANED = 42655.
PASSENGERS TRANSPORTED = 46314.
AVERAGE LOAD FACTOR = 0.668

CASE 2(A)

PASSENGER MAXIMIZATION WITH A DAILY CAPACITY CONSTRAINT

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	61.	11.832	809.	2984.	1225.	1623.	0.544
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	139.	17.604	1756.	4455.	2547.	2700.	0.606
NW	96.	21.692	1358.	5314.	2836.	2836.	0.534
TW	166.	25.324	2129.	6188.	3744.	3744.	0.605
UA	169.	15.525	1849.	5346.	3430.	3626.	0.679
WA	11.	2.000	238.	526.	256.	256.	0.485
	1511.	182.593	16915.	52743.	32137.	35184.	0.667
NON-TRUNKS							
AL	172.	15.884	1644.	7724.	5068.	5600.	0.725
ML	18.	1.196	264.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
PI	109.	5.313	696.	5414.	3398.	3478.	0.642
QH	64.	1.840	911.	1880.	1200.	1200.	0.638
RC	4.	0.666	175.	520.	188.	188.	0.362
	376.	25.497	3833.	16602.	10518.	11130.	0.670
COMMUTERS							
AK	0.	0.0	0.	0.	0.	0.	0.0
KC	0.	0.0	0.	0.	0.	0.	0.0
NB	0.	0.0	0.	0.	0.	0.	0.0
UP	0.	0.0	0.	0.	0.	0.	0.0
VL	0.	0.0	0.	0.	0.	0.	0.0
	0.	0.0	0.	0.	0.	0.	0.0
TOTAL	1886.	208.090	20748.	69345.	42655.	46314.	0.668

CASE 2(B)

SUMMER 1980 DCA SLOT ALLOCATION

PASSENGER MAXIMIZATION WITH DAILY CAPACITY AND NOISE CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	7	0	24
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	0	19	6	9	34
NW	0	18	10	0	4	32
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	0	0	0	0
	26	114	180	61	41	422
NON-TRUNKS						
AL	20	56	2	0	12	90
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
QH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	26	0	22	192
COMMUTERS						
AK	4	0	0	0	12	16
KC	0	0	0	0	0	0
NP	0	0	0	0	0	0
UR	0	0	0	0	0	0
VL	0	0	0	0	0	0
	4	0	0	0	12	16
TOTAL	104	184	206	61	75	630

DAILY AIRLINE STATISTICS

PROFIT = $1.865 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.717
PASSENGER-MILES = 20.411 MILLION
SEATS SUPPLIED = 67717.
PASSENGERS ENPLANED/DEPLANED = 41983.
PASSENGERS TRANSPORTED = 45660.
AVERAGE LOAD FACTOR = 0.674

CASE 2(B)

PASSENGER MAXIMIZATION WITH DAILY CAPACITY AND [illegible]

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	MILES	PAX-MI (000'S)	SEATS	PAX	[illegible]	
TRUNKS							
AA	263.	31.360	2745.	7926.	4841.	3544.	0.[illegible]
EA	61.	11.833	909.	2984.	1225.	[illegible]	0.[illegible]
[illegible]	143.	16.320	1582.	4556.	3306.	[illegible]	0.[illegible]
DA	360.	40.836	4448.	15444.	8951.	[illegible]	[illegible]
NA	[illegible]	16.620	1713.	4205.	2457.	[illegible]	[illegible]
PA	80.	15.778	[illegible]	3849.	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	25.324	[illegible]	6198.	3784.	[illegible]	[illegible]
[illegible]	169.	15.525	1843.	5248.	3430.	[illegible]	[illegible]
[illegible]	0.	0.0	0.	0.	0.	[illegible]	[illegible]
	1480.	173.699	16178.	50499.	31123.	[illegible]	[illegible]
[illegible]TRUNKS							
A[illegible]	174.	16.245	1721.	7924.	5138.	3694.	0.[illegible]
[illegible]	18.	1.196	264.	864.	432.	[illegible]	[illegible]
[illegible]Z	10.	0.599	142.	400.	232.	[illegible]	0.[illegible]
[illegible]I	108.	5.313	696.	5414.	3398.	[illegible]	0.[illegible]
[illegible]	64.	1.340	911.	1880.	1200.	[illegible]	[illegible]
[illegible]	5.	0.566	175.	520.	188.	[illegible]	[illegible]
	379.	25.959	3909.	16900.	10589.	[illegible]	[illegible]
COMMUTERS							
[illegible]	7.	0.160	25.	416.	272.	[illegible]	[illegible]
[illegible]	0.	0.0	0.	0.	0.	[illegible]	[illegible]
[illegible]	0.	0.0	0.	0.	0.	[illegible]	[illegible]
[illegible]	0.	0.0	0.	0.	0.	[illegible]	[illegible]
[illegible]	0.	0.0	0.	0.	0.	[illegible]	[illegible]
	7.	0.160	25.	416.	272.	[illegible]	[illegible]
[illegible]	1860.	199.717	20411.	67717.	41983.	[illegible]	0.[illegible]

CASE 2(C)

SUMMER 1980 DCA SLOT ALLOCATION

PASSENGER MAXIMIZATION WITH DAILY CAPACITY, NOISE AND EQUITY CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	26	6	8	64
BN	0	3	14	5	0	22
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	0	19	6	9	34
NW	0	18	10	0	4	32
TW	0	16	28	0	6	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	26	114	184	59	41	424
NON-TRUNKS						
AL	20	58	0	0	12	88
ML	0	0	6	0	0	6
OZ	0	0	4	0	0	4
PI	50	14	0	0	0	64
QH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	72	70	22	0	22	186
COMMUTERS						
AK	6	0	0	0	0	6
KC	0	0	0	0	4	4
NB	0	4	0	0	0	4
UP	0	4	0	0	0	4
US	0	2	0	0	0	2
	6	10	0	0	4	20
TOTAL	104	194	206	59	67	630

DAILY AIRLINE STATISTICS

PROFIT = $1.862 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.950
PASSENGER-MILES = 20.497 MILLION
SEATS SUPPLIED = 67459.
PASSENGERS ENPLANED/DEPLANED = 41845.
PASSENGERS TRANSPORTED = 45452.
AVERAGE LOAD FACTOR = 0.674

CASE 2(C)

PASSENGER MAXIMIZATION WITH DAILY CAPAC
NOISE AND EQUITY CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENPLANED
TRUNKS					
AA	263.	31.360	2745.	7926.	4942.
BN	57.	10.846	782.	2742.	1135.
DL	143.	16.320	1582.	4558.	3206.
EA	463.	40.936	4448.	15444.	8851.
NA	137.	16.626	1713.	4705.	2457.
NW	80.	15.776	1201.	3846.	2165.
TW	166.	25.324	2128.	6186.	3744.
UA	169.	15.525	1849.	5346.	3498.
WA	11.	2.000	238.	528.	290.
	1488.	174.713	16687.	50785.	32298.
NON-TRUNKS					
AL	172.	15.884	1644.	7724.	5068.
[illegible]	13.	0.897	198.	498.	324.
[illegible]	10.	0.598	142.	400.	232.
[illegible]	106.	5.152	680.	5258.	3298.
[illegible]	64.	1.840	911.	1880.	1200.
[illegible]	4.	0.666	175.	520.	188.
	368.	25.037	3751.	16280.	10310.
COMMUTERS					
	3.	0.060	10.	156.	102.
	1.	0.040	14.	68.	40.
	1.	0.040	14.	68.	40.
	1.	0.040	15.	68.	44.
	1.	0.020	7.	34.	20.
	6.	0.200	60.	394.	246.
[illegible]	1862.	199.950	20497.	67459.	41843.

CASE 2(D)

SUMMER 1980 DCA SLOT ALLOCATION
PASSENGER MAXIMIZATION WITH DAILY CAPACITY, NOISE,
EQUITY AND PUBLIC SERVICE (SHORT-HAUL)CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	5	0	22
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	0	19	6	9	34
NW	4	14	10	0	4	32
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	30	110	184	58	41	424
NON-TRUNKS						
AL	20	56	0	0	12	88
ML	0	0	4	0	0	4
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
QH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	20	0	22	186
COMMUTERS						
AK	6	0	0	0	0	6
KC	0	0	0	0	4	4
NB	0	4	0	0	0	4
UR	0	4	0	0	0	4
VL	0	2	0	0	0	2
	6	10	0	0	4	20
TOTAL	110	190	204	59	67	630

DAILY AIRLINE STATISTICS

PROFIT = $1.858 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.812
PASSENGER-MILES = 20.398 MILLION
SEATS SUPPLIED = 67469.
PASSENGERS ENPLANED/DEPLANED = 41797.
PASSENGERS TRANSPORTED = 45406.
AVERAGE LOAD FACTOR = 0.673

CASE 2(D)

PASSENGER MAXIMIZATION WITH DAILY CAPACITY, NOISE, EQUITY AND PUBLIC SERVICE (SHORT-HAUL) CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	57.	10.846	782.	2742.	1135.	1489.	0.543
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	137.	16.626	1713.	4205.	2457.	2604.	0.619
NW	77.	15.776	1151.	3868.	2126.	2128.	0.550
TW	166.	25.324	2129.	6186.	3744.	3744.	0.605
UA	169.	15.525	1849.	5346.	3430.	3628.	0.679
WA	11.	2.000	238.	528.	256.	256.	0.485
	1485.	174.713	16637.	50805.	31249.	34246.	0.674
NON-TRUNKS							
AL	172.	15.884	1644.	7724.	5068.	5600.	0.725
ML	9.	0.598	132.	332.	216.	216.	0.651
[illegible]	10.	0.598	142.	400.	232.	232.	0.580
[illegible]	109.	5.313	696.	5414.	3398.	3478.	0.642
[illegible]	64.	1.840	911.	1880.	1200.	1200.	0.638
[illegible]	4.	0.666	175.	520.	186.	186.	0.362
	367.	24.899	3701.	16270.	10302.	10914.	0.671
[illegible]UTERS							
[illegible]	3.	0.060	10.	156.	102.	102.	0.654
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
[illegible]	1.	0.040	15.	68.	44.	44.	0.647
[illegible]	1.	0.020	7.	34.	20.	20.	0.588
	6.	0.200	60.	394.	246.	246.	0.624
TOTAL	1858.	199.812	20398.	67469.	41797.	45406.	0.673

CASE 2(E)

SUMMER 1980 DCA SLOT ALLOCATION

PASSENGER MAXIMIZATION WITH DAILY CAPACITY, NOISE, EQUITY AND PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	10	7	0	20
DL	0	14	20	0	0	34
EA	24	27	35	42	6	136
NA	0	1	18	6	9	34
NW	4	20	10	0	0	34
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	30	117	179	61	37	424
NON-TRUNKS						
AL	20	56	0	0	12	88
ML	0	0	4	0	0	4
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
QH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	20	0	22	186
COMMUTERS						
AP	6	0	0	0	0	6
KC	0	0	0	0	4	4
NB	0	4	0	0	0	4
UR	0	4	0	0	0	4
VL	0	2	0	0	0	2
	6	10	0	0	4	20
TOTAL	110	197	199	61	63	630

DAILY AIRLINE STATISTICS

PROFIT = $1.850 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.812
PASSENGER-MILES = 20.229 MILLION
SEATS SUPPLIED = 67435.
PASSENGERS ENPLANED/DEPLANED = 41776.
PASSENGERS TRANSPORTED = 45373.
AVERAGE LOAD FACTOR = 0.673

CASE 2(E)

PASSENGER MAXIMIZATION WITH DAILY CAPACITY, NOISE, EQUITY AND PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	49.	9.860	629.	2484.	1013.	1355.	0.545
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	133.	16.626	1674.	4205.	2430.	2577.	0.613
NW	80.	16.762	1175.	4092.	2256.	2256.	0.551
TW	166.	25.324	2129.	6188.	3744.	3744.	0.605
UA	169.	15.525	1849.	5346.	3430.	3628.	0.679
WA	11.	2.000	238.	528.	256.	256.	0.485
	1477.	174.713	16469.	50771.	31228.	34213.	0.674
NON-TRUNKS							
AL	172.	15.884	1644.	7724.	5068.	5600.	0.725
ML	9.	0.598	132.	332.	216.	216.	0.651
[illegible]	10.	0.598	142.	400.	232.	232.	0.580
PI	109.	5.313	696.	5414.	3398.	3478.	0.642
[illegible]	64.	1.840	911.	1880.	1200.	1200.	0.638
[illegible]	4.	0.666	175.	520.	188.	188.	0.362
	367.	24.899	3701.	16270.	10302.	10914.	0.671
COMMUTERS							
[illegible]	3.	0.060	10.	156.	102.	102.	0.654
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
NB	1.	0.040	14.	68.	40.	40.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
VL	1.	0.020	7.	34.	20.	20.	0.588
	6.	0.200	60.	394.	246.	246.	0.624
TOTAL	1850.	199.812	20229.	67435.	41776.	45373.	0.673

CASE 3 (A)

SUMMER 1980 DCA SLOT ALLOCATION

PASSENGER-MILE MAXIMIZATION WITH A DAILY CAPACITY CONSTRAINT ONLY

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	7	0	24
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	2	19	6	9	36
NW	10	20	10	0	4	44
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	36	118	184	61	41	440
NON-TRUNKS						
AL	20	56	2	0	12	90
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
QH	0	0	8	0	10	18
RC	0	0	4	0	0	4
	72	70	26	0	22	190
COMMUTERS						
AK	0	0	0	0	0	0
KC	0	0	0	0	0	0
NB	0	0	0	0	0	0
UR	0	0	0	0	0	0
VL	0	0	0	0	0	0
	0	0	0	0	0	0
TOTAL	108	188	210	61	63	630

DAILY AIRLINE STATISTICS

PROFIT = $1.886 MILLION
NOISE EQUIVALENT MOVEMENTS = 208.267
PASSENGER-MILES = 20.810 MILLION
SEATS SUPPLIED = 69357.
PASSENGERS ENPLANED/DEPLANED = 42605.
PASSENGERS TRANSPORTED = 46288.
AVERAGE LOAD FACTOR = 0.667

CASE 3(A)

PASSENGER-MILE MAXIMIZATION WITH A DAILY CAPACITY CONSTRAINT ONLY

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	61.	11.832	809.	2984.	1225.	1623.	0.544
DL	143.	16.320	1582.	4556.	3206.	3274.	0.716
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	139.	17.604	1756.	4455.	2547.	2700.	0.606
NW	96.	21.692	1358.	5314.	2636.	2836.	0.534
TW	166.	25.324	2129.	6186.	3744.	3744.	0.605
UA	169.	15.525	1849.	5346.	3430.	3626.	0.679
WA	11.	2.000	238.	528.	256.	256.	0.485
	1511.	182.593	16915.	52743.	32137.	35184.	0.667
NON-TRUNKS							
	174.	16.245	1721.	7924.	5138.	5694.	0.719
[illegible]	18.	1.196	264.	664.	432.	432.	0.651
[illegible]	10.	0.598	142.	400.	232.	232.	0.580
[illegible]	109.	5.313	696.	5414.	3398.	3478.	0.642
QH	61.	1.656	897.	1692.	1080.	1080.	0.638
RC	4.	0.666	175.	520.	188.	186.	0.362
	375.	25.674	3895.	16614.	10468.	11104.	0.668
COMMUTERS							
AK	0.	0.0	0.	0.	0.	0.	0.0
KC	0.	0.0	0.	0.	0.	0.	0.0
NB	0.	0.0	0.	0.	0.	0.	0.0
UP	0.	0.0	0.	0.	0.	0.	0.0
VL	0.	0.0	0.	0.	0.	0.	0.0
	0.	0.0	0.	0.	0.	0.	0.0
TOTAL	1886.	208.267	20810.	69357.	42605.	46288.	0.667

CASE 3(B)

SUMMER 1980 DCA SLOT ALLOCATION

PASSENGER-MILE MAXIMIZATION WITH DAILY CAPACITY AND NOISE CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	1	0	18
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	2	19	6	9	36
NW	0	20	10	0	4	34
TW	0	16	28	0	8	52
UA	0	14	26	0	4	44
WA	0	0	4	0	0	4
	24	118	184	55	41	422
NON-TRUNKS						
AL	20	56	2	0	12	90
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
PH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	26	0	22	192
COMMUTERS						
AR	0	0	0	0	0	0
KC	0	0	0	0	10	10
NB	0	0	0	0	0	0
UR	0	4	0	0	2	6
VL	0	0	0	0	0	0
	0	4	0	0	12	16
TOTAL	98	192	210	55	75	630

DAILY AIRLINE STATISTICS

PROFIT = $1.866 MILLION
NOISE EQUIVALENT MOVEMENTS = 200.048
PASSENGER-MILES = 20.666 MILLION
SEATS SUPPLIED = 67645.
PASSENGERS ENPLANED/DEPLANED = 41963.
PASSENGERS TRANSPORTED = 45494.
AVERAGE LOAD FACTOR = 0.673

CASE 3(B)

PASSENGER-MILE MAXIMIZATION WITH DAILY CAPACITY AND NOISE CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	49.	8.874	727.	2258.	955.	1221.	0.541
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	139.	17.604	1756.	4455.	2547.	2700.	0.606
NW	84.	16.762	1248.	4084.	2296.	2296.	0.562
TW	166.	25.324	2129.	6188.	3744.	3744.	0.605
UA	165.	14.850	1826.	5130.	3312.	3490.	0.680
WA	11.	2.000	238.	526.	256.	256.	0.485
	1484.	174.030	16699.	50571.	31209.	34104.	0.674
NON-TRUNKS							
AL	174.	16.245	1721.	7924.	5138.	5694.	0.719
ML	18.	1.196	264.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
PI	109.	5.313	696.	5414.	3398.	3478.	0.642
GH	64.	1.840	911.	1880.	1200.	1200.	0.638
RC	4.	0.666	175.	520.	186.	188.	0.362
	378.	25.858	3909.	16802.	10588.	11224.	0.668
COMMUTERS							
AK	0.	0.0	0.	0.	0.	0.	0.0
KC	3.	0.100	35.	170.	100.	100.	0.588
NB	0.	0.0	0.	0.	0.	0.	0.0
UR	2.	0.060	23.	102.	66.	66.	0.647
VL	0.	0.0	0.	0.	0.	0.	0.0
	4.	0.160	58.	272.	166.	166.	0.610
TOTAL	1866.	200.048	20666.	67645.	41963.	45494.	0.673

CASE 3(C)

SUMMER 1980 DCA SLOT ALLOCATION

PASSENGER-MILE MAXIMIZATION WITH DAILY CAPACITY,
NOISE AND EQUITY CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	1	0	18
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	2	19	6	9	36
NW	0	20	10	0	4	34
TW	0	16	28	0	8	52
UA	0	14	26	0	4	44
WA	0	0	4	0	0	4
	24	118	184	55	41	422
NON-TRUNKS						
AL	20	50	2	0	12	90
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	50	14	0	0	0	64
QH	0	0	8	0	10	18
RC	0	0	4	0	0	4
	70	70	26	0	22	188
COMMUTERS						
AP	6	0	0	0	0	6
KC	0	0	0	0	4	4
NE	0	4	0	0	0	4
UR	0	4	0	0	0	4
VL	0	2	0	0	0	2
	6	10	0	0	4	20
TOTAL	100	198	210	55	67	630

DAILY AIRLINE STATISTICS

PROFIT = $1.862 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.743
PASSENGER-MILES = 20.637 MILLION
SEATS SUPPLIED = 67423.
PASSENGERS ENPLANED/DEPLANED = 41823.
PASSENGERS TRANSPORTED = 45352.
AVERAGE LOAD FACTOR = 0.673

CASE 3(C)
PASSENGER-MILE MAXIMIZATION WITH DAILY CAPACITY,
NOISE AND EQUITY CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	49.	8.874	727.	2256.	955.	1221.	0.541
DL	143.	16.320	1582.	4556.	3206.	3274.	0.716
EA	463.	40.936	4446.	15444.	9951.	11579.	0.750
NA	139.	17.604	1756.	4455.	2547.	2700.	0.606
NW	84.	16.762	1246.	4084.	2296.	2296.	0.562
TW	166.	25.324	2129.	6188.	3744.	3744.	0.605
UA	165.	14.850	1826.	5130.	3312.	3490.	0.680
WA	11.	2.000	238.	528.	256.	256.	0.485
	1484.	174.030	16695.	50571.	31209.	34104.	0.674
NON-TRUNKS							
[illegible]	174.	16.245	1721.	7924.	5136.	5694.	0.719
[illegible]	18.	1.196	264.	664.	432.	432.	0.651
[illegible]	10.	0.598	142.	400.	232.	232.	0.580
[illegible]	106.	5.152	680.	5258.	3298.	3376.	0.642
[illegible]	61.	1.696	897.	1692.	1080.	1080.	0.638
[illegible]	4.	0.668	175.	520.	188.	188.	0.362
	372.	25.513	3879.	16456.	10368.	11002.	0.668
COMMUTERS							
[illegible]	3.	0.060	10.	156.	102.	102.	0.654
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
[illegible]	1.	0.040	15.	68.	44.	44.	0.647
[illegible]	1.	0.020	7.	34.	20.	20.	0.588
	6.	0.200	60.	394.	246.	246.	0.624
TOTAL	1862.	199.743	20637.	67423.	41823.	45352.	0.673

CASE 3(D)

SUMMER 1980 DCA SLOT ALLOCATION

PASSENGER-MILE MAXIMIZATION WITH DAILY CAPACITY, NOISE, EQUITY AND PUBLIC SERVICE (SHORT-HAUL)CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	1	0	18
DL	0	14	20	0	0	34
EA	24	27	35	40	8	134
NA	0	0	19	0	9	28
NW	8	20	10	0	4	42
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	34	116	184	47	41	422
NON-TRUNKS						
AL	20	56	2	0	12	90
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	50	14	0	0	0	64
SR	0	0	8	0	10	18
[illegible]	0	0	4	0	0	4
	70	70	26	0	22	188
COMMUTERS						
AP	6	0	0	0	0	6
PC	0	0	0	0	4	4
RB	0	4	0	0	0	4
UF	0	4	0	0	0	4
[illegible]	0	2	0	0	0	2
	6	10	0	0	4	20
TOTAL	110	196	210	47	67	630

DAILY AIRLINE STATISTICS

PROFIT = $1.850 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.848
PASSENGER-MILES = 20.561 MILLION
SEATS SUPPLIED = 67443.
PASSENGERS ENPLANED/DEPLANED = 41663.
PASSENGERS TRANSPORTED = 45142.
AVERAGE LOAD FACTOR = 0.669

CASE 3(D)

PASSENGER-MILE MAXIMIZATION WITH DAILY CAPACITY, NOISE, EQUITY AND PUBLIC SERVICE (SHORT-HAUL) CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	49.	8.874	727.	2256.	955.	1221.	0.541
DL	143.	16.320	1582.	4556.	3206.	3274.	0.718
EA	457.	40.334	4410.	15226.	9781.	11399.	0.749
NA	120.	13.692	1606.	3491.	2007.	2100.	0.602
NW	93.	20.706	1336.	5068.	2728.	2728.	0.538
TW	166.	25.324	2128.	6186.	3744.	3744.	0.605
UA	169.	15.525	1849.	5546.	3430.	3628.	0.679
WA	11.	2.000	238.	526.	256.	256.	0.485
	1472.	174.135	16622.	50591.	31049.	33894.	0.670
NON-TRUNKS							
A-	174.	16.245	1721.	7924.	5136.	5694.	0.719
[illegible]	18.	1.186	264.	664.	432.	432.	0.651
02	10.	0.598	142.	400.	232.	232.	0.580
[illegible]	106.	5.152	680.	5256.	3298.	3376.	0.642
[illegible]	61.	1.656	857.	1692.	1080.	1080.	0.638
[illegible]	4.	0.666	175.	520.	186.	186.	0.362
	373.	25.513	3879.	16458.	10368.	11002.	0.668
[illegible]PS							
	3.	0.080	10.	156.	102.	102.	0.654
KC	1.	0.040	14.	68.	40.	40.	0.588
MP	1.	0.040	14.	68.	40.	40.	0.588
UR	1.	0.040	15.	68.	44.	44.	0.647
VE	1.	0.020	7.	34.	20.	20.	0.588
	6.	0.200	60.	394.	246.	246.	0.624
TOTAL	1850.	199.848	20561.	67443.	41663.	45142.	0.669

CASE 3(E)

SUMMER 1980 DCA SLOT ALLOCATION

PASSENGER-MILE MAXIMIZATION WITH DAILY CAPACITY, NOISE, EQUITY AND PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	3	0	20
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	1	19	5	9	34
NW	2	20	10	0	4	36
TW	0	16	28	0	8	52
UA	2	14	26	0	4	46
WA	0	0	4	0	0	4
	28	117	184	56	41	426
NON-TRUNKS						
AL	20	56	2	0	2	80
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
RH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	26	0	12	182
COMMUTERS						
AK	8	0	0	0	0	8
KC	0	0	0	0	4	4
NB	0	4	0	0	0	4
UR	0	4	0	0	0	4
VL	0	2	0	0	0	2
	8	10	0	0	4	22
TOTAL	110	197	210	56	57	630

DAILY AIRLINE STATISTICS

PROFIT = $1.855 MILLION
NOISE EQUIVALENT MOVEMENTS = 199.372
PASSENGER-MILES = 20.509 MILLION
SEATS SUPPLIED = 67399.
PASSENGERS ENPLANED/DEPLANED = 41703.
PASSENGERS TRANSPORTED = 45226.
AVERAGE LOAD FACTOR = 0.671

CASE 3(F)
PASSENGER-MILE MAXIMIZATION WITH DAILY CAPACITY, NOISE,
EQUITY AND PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS
DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.380	2745.	7826.	4943.	5544.	0.699
BN	53.	9.860	754.	2500.	1045.	1355.	0.542
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	135.	16.626	1717.	4211.	2427.	2558.	0.610
NW	86.	17.748	1270.	4330.	2404.	2404.	0.555
TW	166.	25.324	2129.	6186.	3744.	3744.	0.605
UA	169.	15.525	1849.	5346.	3430.	3626.	0.679
WA	11.	2.000	238.	528.	256.	256.	0.485
	1489.	175.699	16732.	51031.	31405.	34352.	0.673
NON-TRUNKS							
AL	155.	14.440	1525.	7044.	4562.	5064.	0.719
ML	18.	1.198	284.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
[illegible]	105.	5.313	886.	5414.	3398.	3478.	0.642
PH	64.	1.840	911.	1880.	1200.	1200.	0.638
[illegible]	4.	0.666	175.	520.	188.	188.	0.362
	359.	24.053	3714.	15922.	10018.	10594.	0.665
COMMUTERS							
[illegible]	3.	0.080	13.	208.	136.	136.	0.654
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
[illegible]	1.	0.040	14.	68.	40.	40.	0.588
[illegible]	1.	0.040	15.	68.	44.	44.	0.647
[illegible]	1.	0.020	7.	34.	20.	20.	0.588
	7.	0.220	63.	446.	280.	280.	0.628
TOTAL	1855.	199.972	20509.	67399.	41703.	45226.	0.671

CASE 4(A)

SUMMER 1980 DCA SLOT ALLOCATION

FAA PROPOSED RULES

SOLUTION WITH A DAILY CAPACITY CONSTRAINT ONLY

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	3	14	1	0	18
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	0	19	6	9	34
NW	0	20	10	0	4	34
TW	0	16	28	0	8	52
UA	0	14	26	0	4	44
WA	0	0	4	0	0	4
	24	116	184	55	41	420
NON-TRUNKS						
AL	0	56	0	0	2	58
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	0	14	0	0	0	14
QH	0	0	8	0	10	18
RC	0	0	0	0	0	0
	0	70	20	0	12	102
TOTAL	24	186	204	55	53	522

DAILY AIRLINE STATISTICS

PROFIT = $1.718 MILLION
NOISE EQUIVALENT MOVEMENTS = 188.098
PASSENGER-MILES = 19.448 MILLION
SEATS SUPPLIED = 59539.
PASSENGERS ENPLANED/DEPLANED = 37079.
PASSENGERS TRANSPORTED = 40288.
AVERAGE LOAD FACTOR = 0.677

CASE 4(A)
FAA PROPOSED RULES
SOLUTION WITH A DAILY CAPACITY CONSTRAINT ONLY

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7976.	4942.	5544.	0.699
BN	49.	8.874	727.	2256.	955.	1221.	0.541
DL	143.	16.320	1582.	4556.	3206.	3274.	0.716
EA	463.	40.936	4448.	15444.	9951.	11579.	0.750
NA	137.	16.626	1713.	4205.	2457.	2604.	0.619
NW	84.	16.762	1246.	4084.	2296.	2296.	0.562
TW	166.	25.324	2128.	6168.	3744.	3744.	0.605
UA	165.	14.850	1826.	5130.	3312.	3490.	0.680
WA	11.	2.000	238.	528.	256.	256.	0.485
	1481.	173.052	16656.	50321.	31119.	34008.	0.676
[illegible] TRUNKS							
AL	119.	10.469	1215.	5104.	3418.	3710.	0.727
[illegible]	18.	1.196	264.	664.	432.	432.	0.651
[illegible]	10.	0.598	142.	400.	232.	232.	0.580
[illegible]	30.	1.127	274.	1356.	798.	826.	0.608
[illegible]	61.	1.656	897.	1692.	1080.	1080.	0.638
[illegible]	0.	0.0	0.	0.	0.	0.	0.0
	238.	15.046	2792.	9218.	5960.	6280.	0.681
TOTAL	1718.	188.098	19448.	59539.	37079.	40288.	0.677

CASE 4(B)

SUMMER 1980 DCA SLOT ALLOCATION

FAA PROPOSED RULES

SOLUTION WITH DAILY CAPACITY AND NOISE CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	8	64
BN	0	0	2	0	0	2
DL	0	14	20	0	0	34
EA	24	27	35	42	8	136
NA	0	0	19	0	9	28
NW	0	0	10	0	0	10
TW	0	0	28	0	8	36
UA	0	12	26	0	4	42
WA	0	0	4	0	0	4
	24	75	172	48	37	356
NON-TRUNKS						
AL	0	56	0	0	12	68
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
QH	2	0	8	0	10	20
RC	0	0	0	0	0	0
	54	70	20	0	22	166
TOTAL	78	145	192	48	59	522

DAILY AIRLINE STATISTICS

PROFIT = $1.663 MILLION
NOISE EQUIVALENT MOVEMENTS = 163.152
PASSENGER-MILES = 18.246 MILLION
SEATS SUPPLIED = 56981.
PASSENGERS ENPLANED/DEPLANED = 36246.
PASSENGERS TRANSPORTED = 39271.
AVERAGE LOAD FACTOR = 0.689

CASE 4(B)

FAA PROPOSED RULES

SOLUTION WITH DAILY CAPACITY AND NOISE CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	263.	31.360	2745.	7926.	4942.	5544.	0.699
BN	6.	0.986	90.	250.	106.	134.	0.536
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	463.	40.936	4446.	15444.	9951.	11579.	0.750
NA	120.	13.692	1606.	3491.	2007.	2100.	0.602
NW	35.	4.930	661.	1240.	760.	760.	0.613
TW	122.	17.532	1676.	4284.	2592.	2592.	0.605
UA	161.	14.175	1776.	4918.	3176.	3350.	0.661
WA	11.	2.000	236.	526.	256.	256.	0.485
	1324.	141.931	14823.	42639.	26996.	29589.	0.694
NON-TRUNKS							
	139.	12.274	1410.	5984.	3988.	4340.	0.725
	18.	1.196	264.	664.	432.	432.	0.651
	10.	0.598	142.	400.	232.	232.	0.580
	109.	5.313	696.	5414.	3398.	3478.	0.642
	64.	1.840	911.	1880.	1200.	1200.	0.638
	0.	0.0	0.	0.	0.	0.	0.0
	339.	21.221	3423.	14342.	9250.	9682.	0.675
TOTAL	1663.	163.152	18246.	56981.	36246.	39271.	0.689

CASE 4(C)

SUMMER 1980 DCA SLOT ALLOCATION
FAA PROPOSED RULES
SOLUTION WITH DAILY CAPACITY, NOISE AND EQUITY CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	16	28	0	8	52
BN	0	2	14	0	0	16
DL	0	14	20	0	0	34
EA	0	27	35	42	8	112
NA	0	0	19	0	9	28
NW	0	12	10	0	4	26
TW	0	0	28	0	0	28
UA	0	10	26	0	4	40
WA	0	0	4	0	0	4
	0	81	184	42	33	340
NON-TRUNKS						
AL	12	56	0	0	12	90
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
QH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	66	70	24	0	22	182
TOTAL	66	151	208	42	55	522

DAILY AIRLINE STATISTICS

PROFIT = $1.633 MILLION
NOISE EQUIVALENT MOVEMENTS = 163.099
PASSENGER-MILES = 18.523 MILLION
SEATS SUPPLIED = 56617.
PASSENGERS ENPLANED/DEPLANED = 35796.
PASSENGERS TRANSPORTED = 38591.
AVERAGE LOAD FACTOR = 0.682

CASE 4(C)

FAA PROPOSED RULES

SOLUTION WITH DAILY CAPACITY, NOISE AND EQUITY CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	220.	25.480	2402.	6432.	3940.	4416.	0.687
BN	45.	7.888	686.	2008.	854.	1082.	0.539
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	411.	33.712	4136.	12516.	8607.	9827.	0.785
NA	120.	13.692	1606.	3491.	2007.	2100.	0.602
NW	68.	12.818	1060.	3140.	1784.	1784.	0.568
TW	96.	13.636	1349.	3332.	2016.	2016.	0.605
UA	156.	13.500	1726.	4706.	3040.	3210.	0.682
WA	11.	2.000	238.	526.	256.	256.	0.485
	1271.	139.046	14784.	40711.	25710.	27965.	0.687
[illegible] TRUNKS							
[illegible]	158.	14.440	1551.	7028.	4636.	5096.	0.725
[illegible]	18.	1.196	264.	664.	432.	432.	0.651
[illegible]	10.	0.598	142.	400.	232.	232.	0.580
[illegible]	109.	5.313	696.	5414.	3398.	3478.	0.642
[illegible]	64.	1.840	911.	1880.	1200.	1200.	0.638
[illegible]	4.	0.666	175.	520.	188.	188.	0.362
	362.	24.053	3739.	15906.	10086.	10626.	0.666
[illegible]	1633.	163.099	18523.	56617.	35796.	38591.	0.682

CASE 4(D)

SUMMER 1979 DCA SLOT ALLOCATION

FAA PROPOSED RULES

SOLUTION WITH DAILY CAPACITY, NOISE EQUITY AN

PUBLIC SERVICE (SHORT-HAUL) CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	10	28	0	8	46
BN	0	2	14	0	0	16
DL	0	14	20	0	0	34
EA	24	27	35	34	8	128
NA	0	0	19	0	9	28
NW	3	9	10	0	4	26
TW	0	0	28	0	0	28
UA	2	8	26	0	4	40
WA	0	0	4	0	0	4
	29	70	184	34	33	350
NON-TRUNKS						
AL	20	50	0	0	0	70
ML	0	0	8	0	0	8
OZ	0	0	4	0	0	4
PI	52	14	0	0	0	66
GH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	64	24	0	10	172
TOTAL	103	134	208	34	43	522

DAILY AIRLINE STATISTICS

PROFIT = $1.614 MILLION
NOISE EQUIVALENT MOVEMENTS = 163.170
PASSENGER-MILES = 18.142 MILLION
SEATS SUPPLIED = 57074.
PASSENGERS ENPLANED/DEPLANED = 35368.
PASSENGERS TRANSPORTED = 38439.
AVERAGE LOAD FACTOR = 0.673

CASE 4(D)

FAA PROPOSED RULES

SOLUTION WITH DAILY CAPACITY, NOISE, EQUITY AND

PUBLIC SERVICE (SHORT-HAUL) CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	197.	22.540	2190.	5694.	3502.	3900.	0.685
BN	45.	7.888	686.	2008.	854.	1082.	0.539
DL	143.	16.320	1582.	4558.	3206.	3274.	0.718
EA	440.	38.528	4298.	14580.	9271.	10859.	0.745
NA	120.	13.692	1606.	3491.	2007.	2100.	0.602
NW	66.	12.818	1023.	3155.	1754.	1754.	0.556
TW	96.	13.636	1349.	3332.	2016.	2016.	0.605
UA	155.	13.500	1698.	4710.	3022.	3206.	0.681
WA	11.	2.000	236.	528.	256.	256.	0.485
	1274.	140.922	14669.	42056.	25888.	28449.	0.676
NON-TRUNKS							
AL	136.	12.635	1284.	6140.	4030.	4460.	0.726
ML	18.	1.198	264.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
PI	109.	5.313	696.	5414.	3398.	3476.	0.642
QH	64.	1.840	911.	1880.	1200.	1200.	0.638
RC	4.	0.666	175.	520.	188.	188.	0.362
	340.	22.248	3473.	15018.	9480.	9990.	0.665
TOTAL	1614.	163.170	18142.	57074.	35368.	38439.	0.673

CASE 4(E)

SUMMER 1979 DCA SLOT ALLOCATION

FAA PROPOSED RULES

SOLUTION WITH DAILY CAPACITY, NOISE, EQUITY AND

PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS

	SHORT	MEDIUM	LONG	NEW YORK	UNKNOWN	TOTAL
TRUNKS						
AA	0	22	28	6	0	56
BN	0	3	6	7	0	16
DL	0	14	10	0	0	24
EA	24	27	35	42	6	134
NA	0	0	19	1	4	24
NK	3	13	10	0	0	26
TW	0	16	12	0	0	28
UA	2	10	26	0	2	40
WA	0	0	4	0	0	4
	29	105	150	56	12	352
NON-TRUNKS						
AL	20	56	0	0	0	76
ML	0	0	2	0	0	2
OZ	0	0	2	0	0	2
PI	52	14	0	0	0	66
QH	2	0	8	0	10	20
RC	0	0	4	0	0	4
	74	70	16	0	10	170
TOTAL	103	175	166	56	22	522

DAILY AIRLINE STATISTICS

PROFIT = $1.577 MILLION
NOISE EQUIVALENT MOVEMENTS = 163.007
PASSENGER-MILES = 16.960 MILLION
SEATS SUPPLIED = 56911.
PASSENGERS ENPLANED/DEPLANED = 35393.
PASSENGERS TRANSPORTED = 38663.
AVERAGE LOAD FACTOR = 0.679

CASE 4(E)

FAA PROPOSED RULES

SOLUTION WITH DAILY CAPACITY, NOISE, EQUITY AND

PUBLIC SERVICE (ALL MARKETS) CONSTRAINTS

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	230.	27.440	2395.	6934.	4326.	4856.	0.700
BN	38.	7.888	448.	1984.	801.	1087.	0.548
DL	101.	11.520	1073.	3238.	2296.	2344.	0.724
EA	456.	40.334	4383.	15216.	9805.	11409.	0.750
NA	104.	11.736	1375.	2990.	1727.	1809.	0.605
NW	65.	12.818	1000.	3143.	1754.	1754.	0.558
TW	85.	13.636	1031.	3332.	2016.	2016.	0.605
UA	154.	13.500	1687.	4696.	3018.	3198.	0.681
WA	11.	2.000	238.	526.	256.	256.	0.485
	1243.	140.872	13631.	42063.	25999.	28729.	0.683
NON-TRUNKS							
AL	148.	13.718	1410.	6668.	4384.	4844.	0.726
ME	4.	0.299	66.	166.	108.	108.	0.651
OZ	5.	0.299	71.	200.	116.	116.	0.580
PI	109.	5.313	696.	5414.	3398.	3478.	0.642
PR	64.	1.840	911.	1880.	1200.	1200.	0.638
RC	4.	0.666	175.	520.	188.	188.	0.362
	334.	22.135	3329.	14848.	9394.	9934.	0.669
TOTAL	1577.	163.007	16960.	56911.	35393.	38663.	0.679

CASE 4(F)

SUMMER 1980 DCA SLOT ALLOCATION

FAA PROPOSED RULES

SOLUTION CONSTRAINED BY HOURLY CAPACITY AND

AIRLINE TOTALS OF CASE 4(D)

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	7	1	5	4	3	5	3	4	0	4	1	3	6	0	0	0	46
BN	2	0	0	0	0	1	3	0	4	0	2	2	0	2	0	0	16
DL	3	3	1	2	2	2	3	2	2	4	2	2	3	2	1	0	34
EA	9	12	8	11	8	8	8	8	9	9	8	10	3	9	8	0	128
NA	0	0	3	4	3	3	2	1	2	4	1	3	0	2	0	0	28
NW	0	0	1	0	3	4	3	0	1	3	0	2	3	6	0	0	26
TW	3	2	0	2	0	0	0	4	5	2	5	0	4	1	0	0	28
UA	0	3	3	0	3	2	2	2	4	3	3	5	5	3	2	0	40
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	25	21	21	23	22	25	24	21	27	30	22	28	24	25	12	0	350
NON-TRUNKS																	
AL	7	9	7	4	5	3	6	8	5	0	7	1	5	3	0	0	70
ML	0	1	1	1	0	1	0	1	0	0	1	1	0	0	1	0	8
QE	0	0	0	0	2	1	0	0	0	0	0	0	1	0	0	0	4
PI	3	3	5	6	4	4	5	5	2	4	5	5	5	5	5	0	66
RH	1	2	2	2	2	1	1	1	2	2	1	1	1	1	0	0	20
RC	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	11	15	15	13	14	11	12	15	9	6	14	8	12	11	6	0	172
TOTAL	36	36	36	36	36	36	36	36	36	36	36	36	36	36	18	0	522

DAILY AIRLINE STATISTICS

PROFIT = $1.622 MILLION
NOISE EQUIVALENT MOVEMENTS = 163.170
PASSENGER-MILES = 17.418 MILLION
SEATS SUPPLIED = 57251.
PASSENGERS ENPLANED/DEPLANED = 35983.
PASSENGERS TRANSPORTED = 39222.
AVERAGE LOAD FACTOR = 0.685

CASE 4(F)

FAA PROPOSED RULES

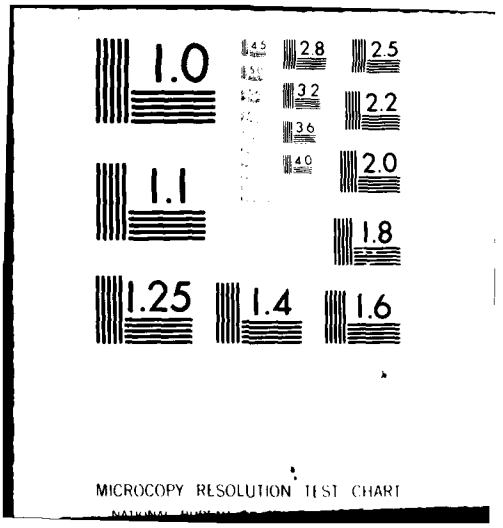
SOLUTION CONSTRAINED BY HOURLY CAPACITY AND

AIRLINE TOTALS OF CASE 4(D)

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	199.	22.540	2091.	5742.	3462.	4077.	0.710
BN	49.	7.888	626.	2016.	923.	1185.	0.588
DL	143.	16.320	1607.	4581.	3210.	3283.	0.717
EA	441.	38.528	4196.	14551.	9415.	10971.	0.754
NA	122.	13.692	1583.	3544.	2053.	2144.	0.605
NW	71.	12.818	851.	3128.	1850.	1850.	0.591
TW	111.	13.636	1353.	3381.	2267.	2267.	0.671
UA	130.	13.500	1340.	4460.	3009.	3133.	0.702
WA	11.	2.000	235.	530.	254.	254.	0.479
	1276.	140.922	13882.	41932.	26443.	29164.	0.695
[illegible] TRUNKS							
	139.	12.635	1425.	6307.	4012.	4458.	0.707
	18.	1.196	264.	664.	432.	432.	0.651
	10.	0.598	142.	400.	232.	232.	0.590
	112.	5.313	732.	5547.	3475.	3547.	0.639
	62.	1.840	786.	1880.	1200.	1200.	0.638
	4.	0.666	176.	520.	189.	189.	0.363
	344.	22.248	3535.	15318.	9540.	10058.	0.657
[illegible]	1622.	163.170	17418.	57251.	35983.	39222.	0.685

AD-A098 897 NOAH (J WATSON) INC FALLS CHURCH VA F/G 1/5
A SLOT ALLOCATION MODEL FOR HIGH-DENSITY AIRPORTS.(U)
AUG 80 C F DAY, J M WHITE DOT-FA79WA-4334
UNCLASSIFIED FAA-APO-80-13 NL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4.5
MICROCOPY RESOLUTION TEST CHART

CASE 4(G)

SUMMER 1980 DCA SLOT ALLOCATION

FAA PROPOSED RULES

SOLUTION CONSTRAINED BY HOURLY CAPACITY MODIFICATION

AND AIRLINE TOTALS OF CASE 4(D)

	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
TRUNKS																	
AA	0	0	5	4	3	5	3	4	0	4	5	3	6	4	0	0	46
BN	0	0	0	0	0	1	3	2	4	0	2	2	0	2	0	0	16
DL	3	3	1	2	2	2	3	2	2	4	2	2	3	2	1	0	34
EA	1	12	8	11	8	8	8	8	9	9	8	10	9	9	10	0	128
NA	0	0	3	4	3	3	2	1	3	4	0	3	0	2	0	0	28
NW	0	0	2	0	3	4	0	0	4	3	0	2	2	6	0	0	26
TW	0	0	0	4	0	0	0	4	5	6	5	0	4	0	0	0	28
UA	0	3	3	2	3	2	2	2	4	3	3	5	5	3	0	0	40
WA	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
	5	18	22	27	22	25	21	23	31	34	25	28	29	28	12	0	350
NON-TRUNKS																	
AL	7	4	7	4	5	3	6	8	5	0	7	5	5	4	0	0	70
ML	0	1	1	1	0	1	0	1	0	0	1	1	0	0	1	0	8
OZ	0	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	4
PI	3	3	5	6	4	4	5	5	2	4	5	5	5	5	5	0	66
GK	1	2	2	2	2	1	1	1	2	2	1	1	1	1	0	0	20
RC	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	4
	11	10	15	13	14	11	12	15	9	6	15	12	11	12	6	0	172
TOTAL	16	28	37	40	36	36	33	38	40	40	40	40	40	40	18	0	522

DAILY AIRLINE STATISTICS

PROFIT = $1.650 MILLION
NOISE EQUIVALENT MOVEMENTS = 163.170
PASSENGER-MILES = 17.627 MILLION
SEATS SUPPLIED = 57265.
PASSENGERS ENPLANED/DEPLANED = 36564.
PASSENGERS TRANSPORTED = 39695.
AVERAGE LOAD FACTOR = 0.693

CASE 4(G)

FAA PROPOSED RULES

SOLUTION CONSTRAINED BY HOURLY CAPACITY MODIFICATION

AND AIRLINE TOTALS OF CASE 4(D)

DAILY STATISTICS BY AIRLINE

	PROFIT ($000'S)	NOISE	PAX-MI (000'S)	SEATS	PAX ENP/DEP	PAX TRANS	LF
TRUNKS							
AA	207.	22.540	2096.	5754.	3718.	4237.	0.736
BN	50.	7.888	636.	2072.	953.	1225.	0.591
DL	143.	16.320	1607.	4581.	3210.	3283.	0.717
EA	447.	38.528	4308.	14539.	9517.	11037.	0.759
NA	122.	13.692	1580.	3550.	2077.	2162.	0.609
NW	75.	12.818	921.	3108.	1902.	1902.	0.612
TW	116.	13.636	1386.	3415.	2357.	2357.	0.690
UA	130.	13.500	1322.	4440.	3011.	3139.	0.707
WA	11.	2.000	236.	530.	254.	254.	0.479
	1304.	140.922	14092.	41989.	26999.	29596.	0.705
NON-TRUNKS							
AL	141.	12.635	1425.	6265.	4037.	4499.	0.718
ML	18.	1.196	264.	664.	432.	432.	0.651
OZ	10.	0.598	142.	400.	232.	232.	0.580
PI	112.	5.313	732.	5547.	3475.	3547.	0.639
QH	62.	1.840	796.	1880.	1200.	1200.	0.638
RC	4.	0.666	176.	520.	189.	189.	0.363
	346.	22.248	3535.	15276.	9565.	10099.	0.661
TOTAL	1650.	163.170	17627.	57265.	36564.	39695.	0.693

DAT
ILM